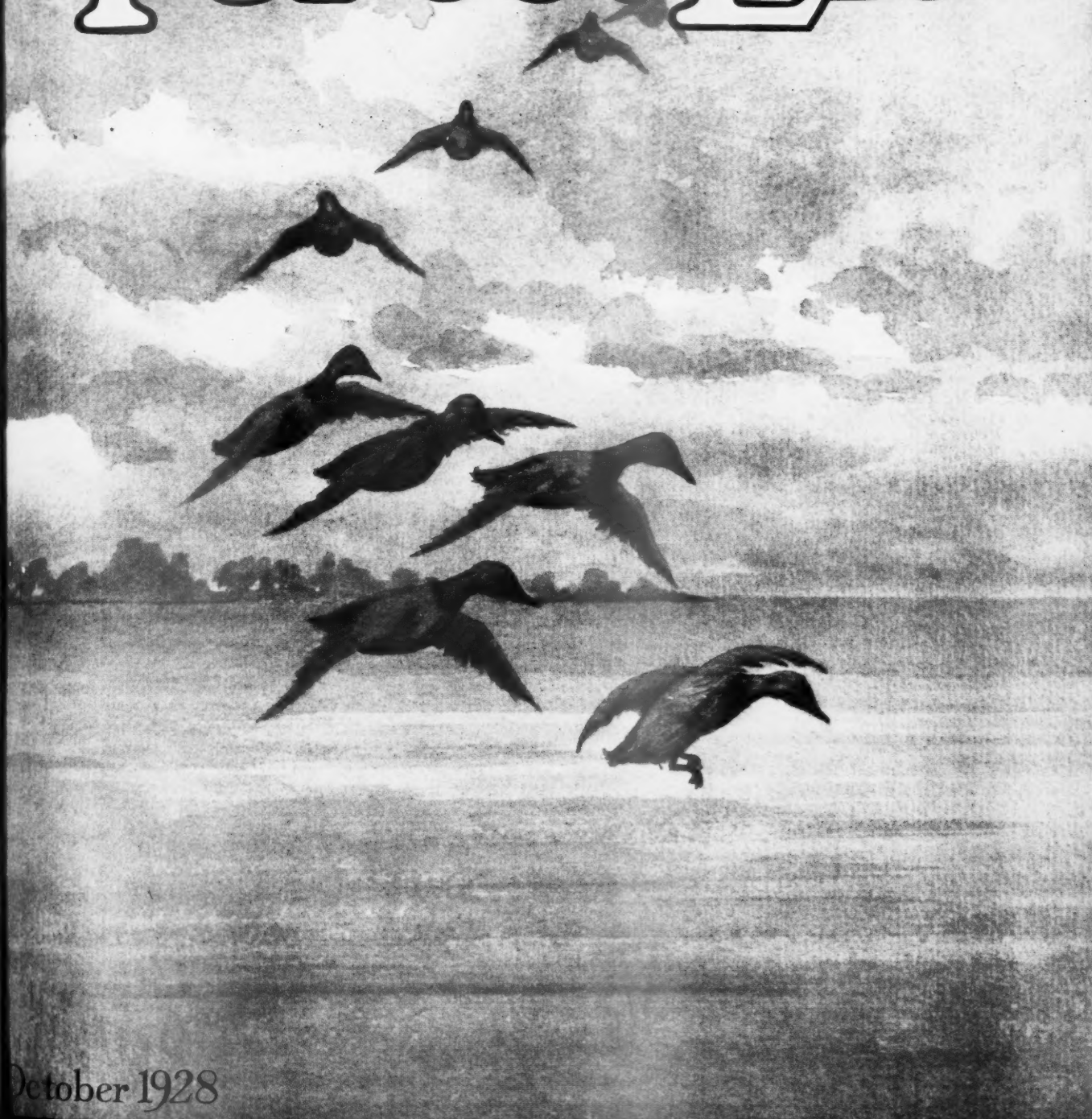


American Forests *and* Forest Life



October 1928

The American Forestry Association

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AMERICAN FORESTS AND FOREST LIFE invites contributions in the form of popular articles, stories and photographs dealing with trees, forests, reforestation, lumbering, wild life, hunting and fishing, exploration or any of the many other activities which forests and trees typify. Its pages are open to a free discussion of forest questions which in the judgment of the editor will be of value in promoting public knowledge of our forests and their use. Signed articles published in the magazine do not necessarily reflect the views of the Association. Manuscripts must be accompanied by return postage. Editorial and Publication Office, The Lenox Building, 1523 L Street, Washington, D. C.



Photograph by John Kable

A TREE

By NOLAN BOOKOUT

I hastened by, one gloomy night of fall,
A great majestic tree that towered tall,
And swirling through its writhing branches bare,
A clammy wind rushed, howling in despair.
The thought then came to me, as I passed by,
Of long, hard years it battled to the sky.
Its scarred and twisted roots were piled around
In rank confusion where they pierced the ground,
And there above, in challenge to the storm,
Arose the mighty bulwark of its form.
Who knows what scenes this hoary monarch ruled?
Who knows what men its leafy branches cooled?
While on through time it bore all fortunes rife,
With banner weaving high amid the strife,
And marked the endless line of marching years
Where it in uncomplaining patience rears.
All this I thought and wished that I might be
As patient as that patriarchal tree.

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Hunting the Forest Outlaw

By F. J. CLIFFORD



THE squawking of hens and protesting squeal of pigs borne away to the gloomy log-tangled forests of northern Washington, by wild-cats, cougar and bear, brought about government control of predatory animals. For these squawks and squeals through the medium of irate ranchers found their way to T. B. Schaller, one of the newly appointed Forest Supervisors. That was in 1907.

The domain of Supervisor Schaller was a mighty one, comprising, as it did, both the east and west sides of the Cascade Mountains. Both slopes went under the name of the Wenatchee National Forest. Looking on the Supervisor in the light of a newly crowned king, the pestered ranchers preferred to hold him responsible for the plundering acts of the outlaw animals that inhabited his territory.

Supervisor Schaller regretted their depredations, but a deal of time slipped by before a way was found to control them.

That time came when he hired a number of men to range his forest, build trails, cruise timber, fight fires and do a host of duties. Among them was a young man by the name of Peter C. Petersen.

The Supervisor noticed that while most of his forest rangers were swapping stories around the evening camp-

fire, young Petersen would be stealing away into the jungled forests with his hound, Fanny, and a woolly, stub-tailed air-dale. Sometimes the trio would be back at bedtime, but often it was nearer midnight.

Even when the young hunter rolled in with the rest of the men it was no guarantee he would remain there. For just as sure as the "tree-bay" of his dogs came floating in from some distant ridge, Petersen would crawl from his comfortable bed and hurry to them. In the morning a fresh wild-cat skin would be found with others he had killed.

The constantly growing array of skins gave Supervisor Schaller an idea. One day, as Petersen came trudging in with three pelts over his shoulder, Schaller remarked:

"Young man, I believe it would pay the government to employ you just to kill wild-cats."

"Well," replied Petersen, hardly believing that such joyful employment could be possible, "I'm sure the ranchers would appreciate it and I would do all in my power to earn whatever salary they cared to give me."

Supervisor Schaller immediately placed his idea before the proper officials in Washington and Petersen was appointed predatory animal hunter under the Department of Agriculture, said to be the first office of its kind in the United States.

Petersen revelled in hunting for many succeeding weeks. It



Peter Petersen—Said to be premier official predatory animal hunter for the United States Government, with his hounds



"Pal" and "Fanny"

seemed very strange that he should be paid to do what he regarded as joyous recreation. With his dogs he lost himself in the shadowy depths of the forest, sleeping where night found him. Mealtime was always uncertain and the food equally so. But the growing number of cat skins

was sure and certain. One winter he hung up 105.

From wild-cats he progressed to cougar and stock-killing bear. Reports from angry ranchers sent him hurrying to the east and west side of the Cascades, where the four-footed outlaws were plundering livestock. This type of animal is more crafty than its wilder brother and generally leads the hunter into the most difficult and lonely sections of the mountains. But no matter how forbidding the country, Petersen always followed his canine companions. If he failed to overtake them the first day he would the next. His dogs knew it.

Petersen does not crawl out of a warm bed and hurry out into the slush and snow or subzero weather through any particular love of it. He much prefers that his dogs would stay in their kennels at such times. But for all that, when he hears their "treed" bark, he knows they are calling him—calling him just as plainly as if they were spoken words.

In this way, Petersen, and other government hunters, have trained their long-eared helpers and established a relationship that when they are sent after a ranch-raiding "varmint," there is a betting chance that it will be apprehended. And, of course, with all this, there must be a goodly backing of courage—real he-man stuff.

"It is very strange," Petersen remarked one time, "but trail-hounds are no better than their masters. I have noticed that when a hunter hesitates about

taking chances, his dogs will do the same. Many times I have gone into places that I would have much preferred to avoid, for the moral effect it had on my hounds."

This was demonstrated in the upper Methow valley, a big unpeopled land. A two day's chase drove a large cougar into a deep rocky cave. When Petersen arrived, his hounds were inside trying their best to force the big cat out. Knowing it was only a question of time until they would be cut to shreds, he crawled in after them, but his audacity only encouraged the dogs to go deeper. Hastily backing out he fired his rifle. The hounds, as usual, came rushing out to see what was up. Before they could return he blocked the opening with two large rocks.

He was determined to have the beast, however. Procuring a candle from his pack he removed the rocks and crawled in, kicking back the hounds with his heels. Poking his rifle ahead in case of sudden attack, he edged along, watching for his quarry. Somewhere within the depths the hunter could hear low, rumbling growls. Still he could see nothing. Finally, peering around a jutting rock, he found himself looking into two luminous orbs, not twenty feet away.

Hastily squatting back, he leveled his rifle across his knee, straight for the greenish lights. The roar of his gun was terrific, instantly extinguishing the candle. He had not reckoned with this possibility. And he had no time to relight it, for the big cat was spitting and growling and thrashing about in the blackness just ahead.

A movement in his direction sent him crawfishing backward, crushing his head against a sharp rock. He was so dazed by the blow that he could not prevent the faithful hounds from rushing in. They made no outcry, however, and he knew the cougar was dead.

It takes but a few instances of this nature to establish a subtle bond between the hunter and his four-footed helpers—a bond that sometimes weighs heavily in the balance between life and death.

This was brought out in a telling way to Petersen when, after a six-hour grilling chase over the roughest kind of country, an eleven-hundred-pound stock-killing grizzly



The monster grizzly—Petersen's quarry—his great jaws reeking with a slather of foam, fell on his side, and lashed about for a moment before gasping out his life in great sighs

was brought to bay. The huge beast made his last stand in a dense jack-pine thicket on Holman Pass, a notch in the Cascade divide. It is a most interesting land, beautiful in its loneliness. It is so completely devoid of any touch—any hint of human life that the wretched spruce trees at timberline seem to typify some kind of elusive personality, a near companionship.

Add to this the immediate presence of a half-ton grizzly growing more savage as his fatigue increases, and one can appreciate to some extent the devoted love and courage of the hunter to stay with his long-eared companions.

Petersen had been ordered out on this hunt because his pack of hounds was known to follow a grizzly and hold him when brought to bay. The outlaw had killed twenty-one head of cattle in Gate Creek basin above

the Goat Wall. Petersen fol-

lowed the bear for many

days, unable to

overtake him.

He marveled

at the staying

powers of the

outlaw, as his

own lungs fre-

quently heaved

in the thin un-

satisfying air.

Then one day

came the

knowledge

that he was

gaining on

both bear and

hounds, or,

more likely,

they were tir-

ing. The

grizzly had

come to bay a

few times. He

even obtained one glimpse of silvery glinting bristles atop the outlaw's mammoth shoulders.

The inevitable din of battle came shortly afterwards in a small jack-pine thicket. The hounds had cornered their prey. Petersen clawed up the steep, rugged mountain side with all the speed his pounding heart and heaving lungs would allow. He hesitated at the edge of a small opening. Between him and where the hounds and bear were battling was a springy mountain meadow. To cross it would put him in full view of the raging grizzly. To go around where there was much fallen timber would involve too much time. He decided to cross the meadow. Swinging his heavy rifle into position, he advanced cautiously.

Suddenly, amid the crashing of brush, the thicket disgorged a raging demon galloping toward the hunter in mighty bounds, its shaggy coat glistening like burnished steel in the brilliant sunlight. But the grizzly did not gallop alone. The fox-hounds, Trailer and Bill, tore at his left quarter,

while Buck and the Russian stag half-breed lunged at his right. But he would not be stopped. Here at last was sight of the thing his natural cunning told him was responsible for all the exhausting torment that had befallen him, and his eager jaws reeked with a slather of foam to get at it.

The blood-hound, Pal, and his mate, Fanny, had been deeper in the thicket. They were racing behind, striving for an opportunity to get at their quarry's hams, and Petersen was fearful of hitting them, for the head and chest of the bear, rising and falling a full three feet at each bound, made a most difficult target. But suddenly Pal, ranging along his rear, attacked the tender flank of the grizzly. With a throaty roar the big animal reared, and, turning quarterly backward, lashed out viciously at the elusive blood-

hound. A quick pressure on the trigger,

and Petersen sent a soft-nose

bullet into the left

flank of the bear.

Howling with

anguish, the

great beast

whirled and

leaped for the

man who was

whipping an-

other shell

into the cham-

ber of his gun.

He only

needed a sec-

ond—a half

would do. It

was given by

the faithful

Fanny, who,

racing ahead,

had placed

herself in

front of her

loved master.



The great cat, reported to have been hunting pheasants, had blundered into a trap set for coyotes at the edge of the woods, and was caught fast

With all of her remaining strength she leaped full into the face of the raging grizzly. One smashing blow sent her spinning off into the brush. This interference gave Petersen just time to whip the rifle in line and fire. The bullet turned the animal aside, but as the great beast cartwheeled by, one of its mighty arms clutched out in desperate desire and missed the hunter by a scant foot.

The grizzly fell on its side, lashing about for a moment before gasping out its life in great sighs. The hounds, racing up, vented their rage by tugging at the shaggy beast—like ants at a dead mouse. Poor Fanny's devotion cost her her life. Petersen is firm in the belief that had it not been for her, five starved dogs would have wandered into the camp of some lonely sheep-herder who might have found their dead master, and again might not. Be that as it may, it at least illustrates the chances the government hunter must take when he bets his skill and endurance against wild life outlaws and untamed nature.

One time Petersen had been out forty-eight hours with his hounds after a cougar. He would have fed his dogs and self also on cougar steak, only they failed to get the cougar. So, when a railroad track was reached, they made for the nearest town, weary and disappointed.

Coming to a trestle, Petersen noticed a pool of blood. Supposing it to be from some animal killed there, he called his hounds, who would ordinarily lap it up like so much cream. But they took one sniff and backed away. No amount of urging could make them touch it. Discovering what appeared to be a piece of flesh he picked it up to give the dogs, but to his horror it proved to be a piece of human skull. Glancing below he saw the form of a man sprawled on the rocks, where a train had hurled it. This instance was destined to play a very important rôle in the strangest and most tragic case that ever came before the Predatory Animal Control Bureau.

It was December, 1924, and bitterly cold. At his office at Olympia, Dr. Glen R. Bach, leader of predatory animal control for the State of Washington, glanced at the morning paper. His practiced eye, trained for such news, quickly centered on a front-page item telling of a young boy who had been killed by a wild animal in a lonely canyon of Okanogon County.

Securing what details were available, he was soon in touch with his nearest hunter. It chanced to be Petersen, who was ordered by train to Wenatchee, where Field Agent Englund was ready with a car to rush him to the scene of the killing. More than two days had elapsed since the cougar had attacked the boy, killing him and partly devouring his body. County authorities had brought in a Canadian hunter and a young partly trained dog. Accompanying the Canadian was a deputy sheriff and the noted Okanogon hunter, Hildebrand. The trio had taken up the chase within twenty-four hours after the attack. Consequently, government hunter Petersen was considerably handicapped, as practically all tracks of both the cougar and boy had been trampled out.

Two plans were open to Petersen. One was to start where the tragedy took place and let his cold-trailer, Pal, untangle the whereabouts of the killer. The other plan was to circle through the miles of forested mountains, with

the hope of picking up the cougar's trail. But that plan was discarded due to crusted snow in places where the animal would leave little, if any, trail.

A pair of brown gloves the boy had worn was held to the sensitive nose of old Pal. The hound sniffed them rather indifferently, a most significant act, as it proved the boy did not turn to fight off the animal. But when his stocking cap was held up, the hound bellowed a challenge that reverberated against lonely canyon walls.

His nose charged with the cougar's smell, Pal was allowed to take up the cold trail. He caught it from the brush the animal had touched and back-tracked it a short distance to where it had been lying on the sunny side of a large boulder.

Sensing the wrong direction, the hound trotted back and, starting anew, "brush-trailed" up the mountain side. Sniffing along at brush and rock, Pal worked his slow way until the men with him could plainly see he was leading them where the county men were trailing the killer. That brought up a sharp question of hunting etiquette. Both Englund and Petersen were very dubious of the young partly trained dog belonging to the Canadian. Not being a trail-hound, they could not possibly see how it would be able to work out the cold trail. Old Pal tugged at his chain and whined to go on.

"Pull him off and start circling!" ordered Englund—and he has regretted that order many times since.

Petersen wired Dr. Bach for his maple skis. He strapped them on, and with a blanket roll on his back and

food for himself and dogs packed on the husky backs of Buck and Monkey-face, he circled and recircled about the county hunters. He humped over fires when it was too cold to lie down. He toiled up mountain slopes and glided swiftly down, his faithful companions floundering behind—lonely places where a twisted ankle or a broken leg meant untold suffering or even death. But no cougar tracks were found.

Five weeks drifted by while mountain schools were closed and reopened with the ebb and flow of cougar reports. Worried fathers patrolled their farm boundaries, and mothers, with fear-widened eyes, stared at the dark forests and refused their young broods the customary privilege of skating (Continued on page 621)



This cougar had ranged about Lake Chelan for three years, killing mostly sheep and deer. Fourteen deer carcasses were found as a result of this killer's activities in three days. It was finally brought down by a government hunter, with the help of his dogs



"What tales they might unfold, could certain trees but speak"

The "Why" of Timberline

By TITUS ULKE

*"A crooked pine stands lonely on barren icy height,
He grows a little sleepy, as blanketed in snowy white,
He dreams of a lovely palm, in distant Eastern lands,
Which sorrows in silent sadness, on burning desert sands."*

TIMBERLINE is defined as the height on mountains at which the growth of trees stops; it varies with climate and altitude. Treeline, on the other hand, is the limit of latitude at which trees grow. There is also a wind tree-line in mountainous regions, which is often located at some distance above timberline, and embraces the last outposts or tree sentinels.

The rôle played by snow, ice and sand blast in dwarfing or killing trees, and in causing timberline on mountain sides, is a fascinating subject for study. The nature student and mountain climber often notices the bizarre forms assumed by the outposts of the forests at the timber and tree line frontiers, and the striking differences in the types found in various parts of the world. This is so even in the same country, as in the White Mountains and Adirondacks, when compared with tree types occurring in the Rockies.

In Europe, and particularly in the Alps and Pyrenees, the timberline has been greatly modified by human agencies. Flocks and shepherds have played a considerable part in bringing about present conditions. The treeless character

of many alpine pastures is entirely due to the destructive activity of man and grazing animals. In the Alps and Pyrenees trunks and stumps may be seen in many places far above the present timberline, showing clearly that the limits of the forest have not always been what they are today. Professor C. H. Shaw states that he has witnessed shepherds in the French Alps pulling up young trees near timberline in a manner which left no room for speculation as to their destructive efficiency. In view of these peculiarly unfavorable conditions prevailing in Europe, which makes the determination of the true timberline there very difficult, let us consider our own wooded mountains, where timberline conditions are in many regions almost entirely undisturbed, as in the White Mountains, and in the Montana and Canadian Rockies.

Eight different factors, working singly or in combination, are assigned as the cause of timberline. They are as follows:

Cold, based on the widely held belief that the low temperature of mountain tops prevents the growth of trees. That cold is incapable of explaining timberline fully appears

to follow from the known slight effects of low temperature upon hardy plants, and the fact that forests do exist in some of the coldest districts known on the globe.

Shortness of the vegetative season, the idea being that the physiological activity or success of the tree is hindered by the relatively short and cool season, so that either the seeds will not mature or that there will be no growth of new wood. While it is undoubtedly true that many trees in high altitudes are unable to mature their seeds, wind-dispersed seeds apparently would have no difficulty in traveling up from below, and a short cool season is, therefore, considered insufficient to fully explain timberline.

Wind or dry-killing in winter, that is, the drying action of the winter wind, exposing the trees to serious danger during the resting season, since they are not then able to replace the water they may lose. Diminished pressure, as well as increased insolation, that is, exposure to the sun's rays, would tend to increase this danger for trees at high altitudes. In the White Mountains and Adirondacks, where timberlines occur with some regularity at about 5,000 feet, the vegetation of their higher altitudes bears every evidence of the severe effects of wind action. At timberline the forest appears as a thicket or level-topped society of stunted trees of balsam fir and spruce, which is sometimes dense and flat-topped with mutually interlocking branches. The outposts of the dwarf forest are found in local depressions or beside sheltering rocks, the trees growing to a height roughly corresponding to the sheltering rock, which acts as a wind-break. Where they are unprotected on the windward side, such wind cripples often grow entirely one-sided and may be complete denuded of bark on that side by sand-blast action.

Spring or summer frosts, particularly the killing effect on

the trees of sudden temperature changes in late winter or early spring, as happened strikingly in Glacier National Park in February, 1916, may aid in causing timberline, but only to a limited extent.

Fire, spontaneous or otherwise, is a contributory factor. Brown gashes or russet-colored areas, dotted at times with the bleached skeletons of countless trees, extending to the upper limits of the forest, mark the path of the forest fire, which may have been caused by the careless camper, smoking tourist, sparks from an engine, or lightning.

Insects and fungi. The destructive work of the dreaded *Dendroctonus* and other bark beetles in the Black Hills country, the insidious blister rust on any of the numerous white pines and of the deadly chestnut-blight in the Eastern States, are well known examples of these factors, inimical to tree life, causing widespread destruction of forests.

Near timberline one may often observe the crushing and killing effect on trees of giant boulders, loosened by frost from the higher ledges, and of pelting slide rock, which prevents the young trees from getting or retaining their footing, or abrades or debarks and kills older trees.

Heavy and long persisting beds of wet snow no

doubt constitute the most important factor in inhibiting the development of a forest, and help bring about the existence of alpine grassland. Mechanical pressure of the snow beds leaves its impress on the dwarf trees, while avalanches tear fearful gaps in the ascending ranks. The Rockies of Montana and Canada and the Selkirks of British Columbia, which strongly resemble the Alps in height, ruggedness and the prevalence of glaciers and perpetual snow fields, are far



White-bark pine at 6,500 feet elevation, where the battle of the trees begins



Snow and stone-crippled balsam firs at 8,300 feet, fighting courageously for life

less wind swept, at least in summer, than the mountains of New England and New York, and consequently normally exhibit a timberline vegetation in which snow, wind and slide-rock tree cripples predominate, as against the prevailing wind-cripples found in our Eastern States.

In the Selkirks, in ascending beyond 5,300 feet, the dominant species of the subalpine forests—the alpine firs and

plained, according to Shaw, as follows: "During the prolonged melting period, the wet snow may *drown* the buried branches, by preventing aëration, and at the same time promote the attacks of fungi on the branches held under the snow. Direct mechanical injury is, of course, also occasioned by the weight of the snow and the effect of its creeping motion on very steep slopes.



An outstanding example of wind-crippled trees near timberline, 8,000 feet elevation. Note the action of sand-blast on the windward side, where the tree is completely denuded of bark

Engelmann spruces—begin to appear in little groups separated by hardy shrubs, such as the White Mountain rhododendron and tall whortle-berry. Higher up the intervals between tree groups are occupied by the red or greenish-white heathers and snow-white heath, till finally at 6,000 feet one emerges into lovely flower-bedecked open alpine fields, dotted with scattered clumps of spire-shaped trees, which, on mounds and elevated spots, wander upward to an elevation of 7,500 feet. These groups at timberline usually consist of a central spruce or two, of patriarchal size, surrounded by numerous smaller alpine firs. Apart from the groups of dwarf trees of higher altitudes, we find that most of the trees are spire-shaped, with healthy and flourishing tops. However, on all sides the trees bear evidence of the mechanical action of snow and slide-rock. They are often branchless and abraded at their bases on the hillward side. Little trees are seen bent over and denuded of branches on one side, and many are only healthy in their topmost branches, the rest of the tree being dead, matted, or infested with fungus growth. Their appearance may be ex-

As one ascends above the alpine grassland of the valley heads to the elevated outposts of the forests, the effects of wind are once more visible. The trees which are permitted by the snow to grow on ridges and hillocks at an altitude of 7,000 to 8,000 feet, exhibit the characteristic forms of wind cripples. They are usually the toughest and most supple species, such as the alpine firs, Engelmann spruces and the limber and white-bark pines. Finally, at 8,500 or 9,000 feet, one may occasionally encounter prostrate or tiny dwarfs, as the writer did on the west slope of Mt. Stephen, where a sound and healthy Engelmann spruce tree only three or four inches high was found on shaly soil amid a thick mat of alpine willow only an inch high, yet thriving with their catkins of silvery wool and able to mature seed.

"What tales they might unfold, could certain trees but speak,

Of battles against the cold, on yonder lofty peak!

By avalanche were caught, yet firm they held we know,

How gallantly they fought, with hail and wind and snow!"



FOLLOWING BEAVER TRAILS

By D. S. Emmons

Photographs by C. S. Emmons

BRIGHT and blue when Dan and I set out, the October morning changed before we had climbed half way to Zach's cabin on Minister Hill. Battleship gray clouds hurried out of the north and rolled a pale, transparent screen across the sun. It snowed a little—great feathery flakes that made patterns on Dan's red hunting jacket and left cool, ghostly kisses on our cheeks. Then, as suddenly, the sun shone bright again; the air was sweet with the fragrance of damp balsam, and waiting for us at his cabin door was Zach—guide, hunter, trapper, but first and last, Dan's friend.

Ever since Dan could hold up an alder pole or sight a small-caliber rifle they have been inseparable cronies. With an old violin Zach has devoted the greater part of his life to the woods, living in summer on the finest that forest and stream can offer, but in winter, as he solemnly avows, on "cold north wind and sawdust."

Together we tramped on, up hill and down, to the place where the wood-road ends and the trails begin, into the unbroken forest that to Zach and Dan is an open and well-loved book. At Grindstone Pond we halted for a consultation. The boat had been left on the opposite shore.

"Well, we might as well walk, hadn't we?" asked Dan.

"Yes, or go a-foot," was the reply.

So a-foot we pushed our way through the alders and short growth along the water's edge. In a sunny cove we came upon a good-sized beaver house built against the bank. Cracks and hollows between the sticks on the outside were being filled with calcareous mud which, once frozen, as the old book says, "can be penetrated only by the fire of heaven or the steel of man, and which no animal will attempt to open or to overturn." Near the top an artfully concealed

opening was left through which fresh air could pass to and from the room below.

"Them beaver chose that site from all the others in the pond," said Zach. "Calculated t'hev a house thar myself, someday. It's nigh onto a clear spring, 'n them critters knows it."

"What good does a spring do them?" I asked, thinking the pond ought to provide water enough.

"Makes the water warmer. It's a hard winter comin', too," he added. "See what a pile of food they're gettin' up!"

We saw a line of brush, short sticks and logs extending thirty or forty feet straight out from the house. Zach assured us that they formed a solid mass from the surface to the bottom of the pond. By weighting



Ever since Dan had been old enough to hold up an alder pole, Zach—guide, hunter and trapper—had been his friend. They were inseparable cronies

these sticks down with mud and stones and interlacing others with them the beavers start their immense food-pile, the greater part of it below the freezing level of the water. During the long winter the bark is gnawed from the logs, and usually the supply lasts until the ice has melted and the snow has left the woods; but once in a while calculations fail and to save a colony from starvation some hardy member of the family has to tunnel through the snow and ice and cut more trees. We found much evidence of inadequate budgets. Poplar and birch had been cut four feet or more from the ground, a height at which no beaver could work standing on the ground level.

On through the woods we went, copper-colored leaves rustling beneath our feet. Here and there bushes had been gnawed by deer and beech trunks marked by muskrats.

Once Dan's gun spoke sharply and a partridge fell motionless at our feet.

"Ye must 'a hit him the fust shot," drawled Zach, "or else skairt him t'death."

We passed a place where he had a bear trap hidden. "Trap one of them city fellers made," he told us. "Jaws



We found many evidences of feverish, anxious work by the busy little fellows—poplar and birch cut even as high sometimes as four feet from the ground



We tramped on—up hill and down dale—into the unbroken forest that to Zach and Dan was an open and well-loved book, on the trail of the beaver

thet long"—measuring the length of his gun-barrel. "Hardest trap t'set I ever see. Hain't caught the bar yet, but been feedin' of him right along. Beats all how them apples disappear!"

Clearing the last hilltop we gazed down into a crater-like depression and there beheld the object of our ten-mile tramp, a deserted beaver pond and lodge. The one-time handsome spruces were now leaning, ashy-gray and draped with moss. Their leafless twigs, like phantom fingers, pointed stiffly over the stagnant pool, ice crusted about its edge. On one side rose the dome of the deserted house, about fifteen feet in diameter. One entrance was plainly visible above the low water. Three years before the last members of that colony had slid into the water, all unsuspecting, to their cruel death. Traps caught their front paws fast and held their heads under till they drowned. From this dismal scene we turned away. A sinister shadow seemed still to hover there.

Near the pond we found a large beech half cut through but abandoned. "Harder'n iron!" said Zach. Another tree, a poplar, showed five distinct attempts to make it fall. Some distance from the pond a poplar about twenty

inches through, where the cutting had been made, lay along the ground. The top and smaller branches had been neatly trimmed and dragged, Zach estimated, "more'n forty rod" to the water. The tote-road was not yet overgrown and easily followed. Perhaps the trap had put an unexpected end to this project. Usually the entire tree is cut into short lengths and rolled away or floated down canals to the pond.

From one side of a small pond to the other we crossed, walking on top of the solidly constructed dam and marveled at the size of the logs and stones used in its construction.

The continual habit of keeping their tail and posterior parts of their body in the water appears to have changed the nature of their flesh; for that of the anterior parts has the taste and consistency of the flesh of land animals but that of the tail and posterior parts has the odor and all the other qualities of fish.

"The tail, which is a foot long, an inch thick and five or six inches broad, is a genuine portion of a fish attached to the body of a quadruped."

And so, meditating on these amazing creatures and only



At the end of a ten-mile tramp, we found a deserted beaver pond and lodge. The house was out in the center of the pond, with the entrance plainly visible above the low water. We marveled at the size of the logs and stones used in the construction of one of the solidly-built dams, over which we were able to walk

At one place the beavers had been draining off surplus water by means of a spillway which they took care to enlarge in proportion as the brook rose, thus keeping a constant depth. The house was out in the center of this pond, its entrances well hidden by the high water.

"These retreats," writes Smellie, "are not only safe but neat and commodious. The floors are spread over with verdure; the branches of the box and of the fir serve them for carpets. The window which faces the water answers for a balcony to receive the fresh air. . . .

"During the greater part of the day, the beavers sit on end, with their head and anterior parts of their body elevated, and their posterior parts sunk in the water. . . .

half hearing Zach's glowing account of the time he shot a bumble-bee through the wings at forty rods, we retraced our steps. At the spring near his cabin we pledged our friendship in crystal water from an old pint dipper and then Dan and I hurried on down the hill for we had a rendezvous at dusk on the river road. Through a swinging barn-yard gate, around an old cellar-hole, under virgin pines through whose dark branches we could see a star, we tiptoed to the brook the beavers had lately made their own. Cautiously we balanced ourselves on box seats conveniently located at the edge of the pond, directly on top of one of the beaver lodges. We waited for some magic to lift the spell that had turned brook and trees and sky into an enchanted tapestry

curtain before us. On a sudden, but without audible sound, the pond, so long a flawless mirror, heaved and swelled and rapidly broke into motion. A widening wake of light revealed a big beaver of ancient and honorable mien, swimming up and down, nose elevated, ears alert for the slightest unaccustomed sound. Beneath our feet we heard muffled grunts and puppy-like cries—the youngsters begging for their supper. Fat bubbles rose slowly to the top of the water near the lodge. Sticks half above the surface swayed uncannily at their moorings and the water clouded with mud as the unseen workers at the bottom of the pond started their evening chores.

Quite satisfied that no danger threatened, the old beaver made a beautiful sliding arch of his back as he dove gracefully, to reappear in a moment followed by two others. They swam with easy elegance and came within three or four feet of us, their sensitive noses raised high out of the water busily sniffing the wind, their small round bead-like eyes blinking inefficiently in our direction. We sat as though images turned to stone these many years.

"Look!" whispered Dan.

The beaver had started what appeared to be a combination game of tag and hide-and-seek. They chased one another, they dove quickly and came up uttering husky cries: "You're it!" "Now find me!" They rolled and gamboled in the water like fat porpoises.

Suddenly from further up the brook came a sharp, cracking report, instantly multiplied by three as each beaver before us repeated the danger signal, lifting his flat paddle-like tail and spanking the water with a will as he plunged speedily below. We feared they would not venture out again but shortly all three glided unconcernedly from the still, black shadows. Two of them headed down stream. We heard one climb upon a bank, fussily settle himself and begin to gnaw noisily.

About twenty feet from us, on the opposite shore, was a smooth, sloping muddy beach. Out upon this the third and largest beaver pulled himself, crawling clumsily from the water. He was about as large as a good-sized bear cub. It was so dark by this time that we could only dimly see him,

so Dan found his bug light and turned it full on the opposite shore. The beaver gave one startled look in our direction and began to scurry up the bank into the bushes. He couldn't resist the temptation to look around again, however. Peering over one shoulder and finding that the fascinating brightness did him no harm, he turned slowly about and ambled back to the beach where he indulged in a long and luxurious stretch. For a moment he sat blinking stupidly into the light. He looked, for all the world, like a little round-shouldered old man. A ruff of long hair about his cheeks stuck out like side whiskers. A pipe in his mouth would have made the illusion quite complete.

To all appearances he was rather pleased with the mysterious lighting arrangement and made himself quite at home. Sitting back on his hind quarters he began to wash up for supper. He remembered to go behind his ears and was scrupulously attentive to his front paws which are like little hands. With these he slowly carded and combed and dried his long, wet, glistening hair. He was exceedingly fussy about his chest but was pleased at last with the third arrangement of his tie and waistcoat. Greatly put out trying to get at unreachable portions of his fat, broad back, his contortions and poses registering disgust at the failure of these attempts, nearly convulsed us.

Finally, he turned towards the woods again and disappeared in the underbrush. We heard chips falling as he worked and the snap of a branch as his sharp chisel teeth cut it cleanly through.

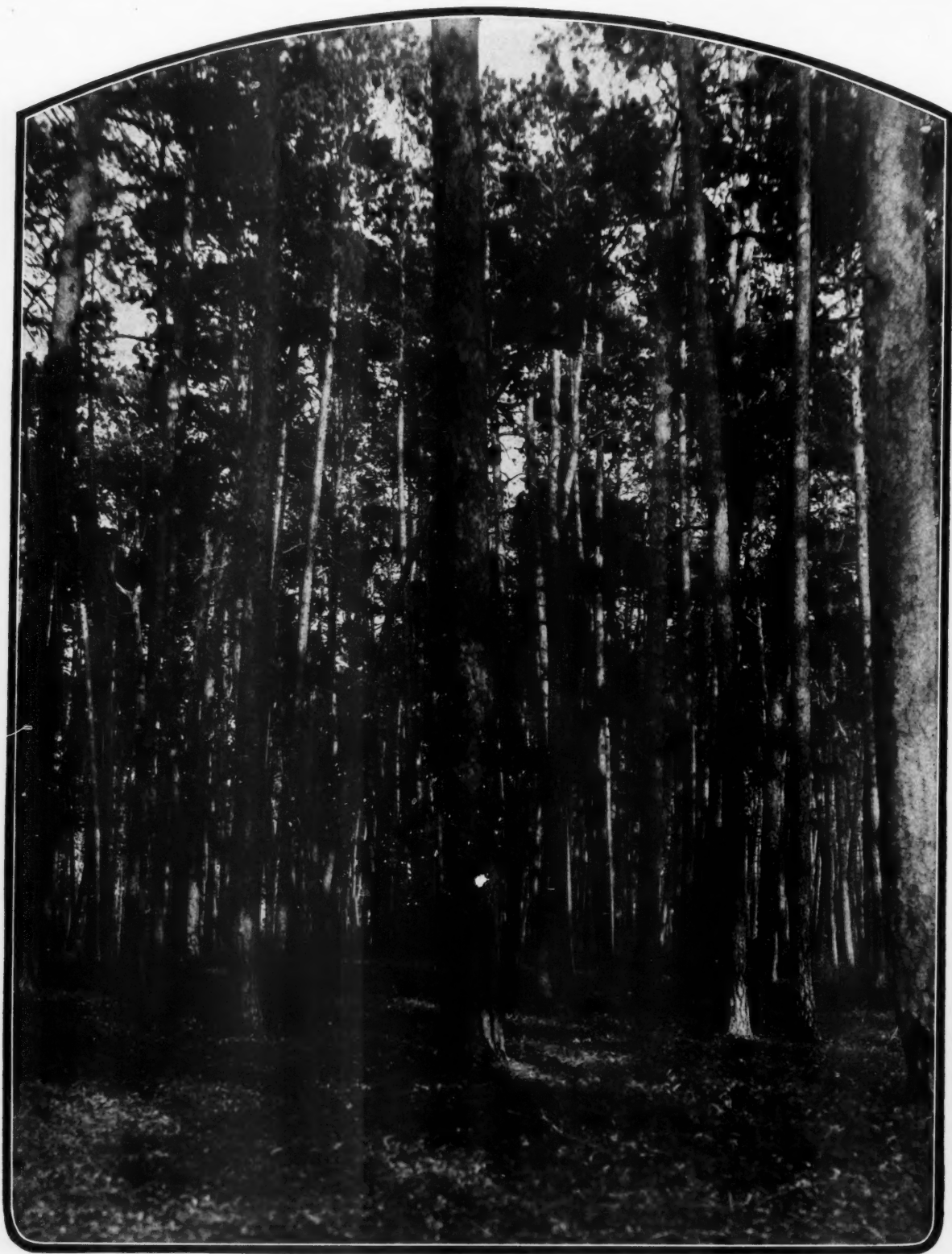
Soon the other beavers returned, swimming deliberately

upstream. One carried a white peeled stick before him and added it to those already carelessly arranged on a house-top. He had eaten the bark for his supper. The other came back empty handed. Perhaps, obliged to mend the dam, he had taken only time for a standing lunch.

Then they dove so perfectly, so quietly, that only the widening waves of light on the surface of the water told us they had gone. The enchanted curtain of hushed repose drew down again and even the stars seemed fixed fast in the mirror at our feet.



Under the tapestried magic of trees and sky, we made our way to the little brook the beavers had lately taken for their own



Virgin Norway pine in the Chippewa National Forest. When the lumberjack arrived Minnesota's forests were immense and beautiful, and a storehouse of great wealth

Minnesota Fights the Old Battle

By ALFRED D. STEDMAN



IONEERS penetrating Minnesota in the fifties found forests stretching from the shores of Lake Superior and the St. Croix River on the eastern boundary clear to the Red River Valley on the west. In all, probably nearly thirty million acres of trees were growing. Wide belts of hardwoods shaded the valleys of the Mississippi

and Minnesota rivers. Stately white pine and Norway pine, with lowland sprinklings of spruce, tamarack and cedar, possessed the undulating regions of the North. Not so many years ago this was all virgin timber—not dead and rotten, not “a total loss,” as those pressing for immediate exploitation of the remnant paint the picture. After untold centuries of growing, though it never once had shaded an appraiser, Minnesota’s forest was green when the lumberjack arrived. It was immense and beautiful, and a storehouse of great wealth.

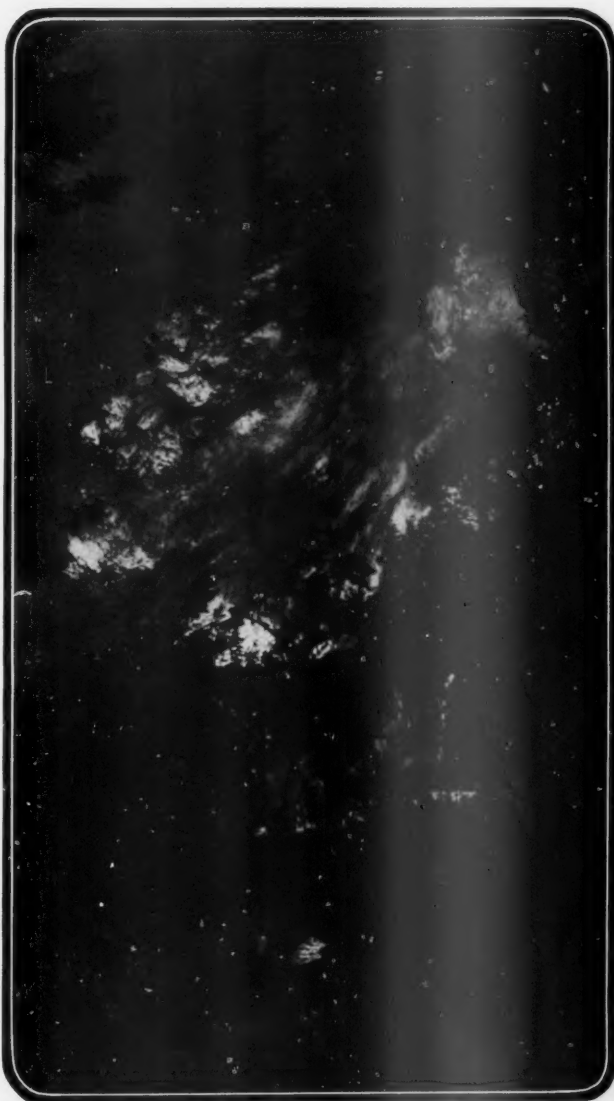
Congress gave generously of this timber to the State of Minnesota. Eight million acres was the bequest, and more than that was given in railroad grants. In 1880 the timber lands in northern Minnesota which had not passed to private ownership comprised 10,000,000 acres.

Those who know the history of exploitation of the nation’s forests will understand what happened to the stands of timber once owned by the

people of this State. By hook and by crook, large blocks passed to lumbering corporations. Fat fortunes were hewn from the timber skimmed off Minnesota hills. Years ago Minnesota had its quota of saw-log statesmen, ready to make life pleasant for the lumber kings. The timber thief came and the State, in accordance with the custom, defined his operations as trespass. In eleven years one Auditor col-

lected \$245,000 for unauthorized removal of timber from State lands. Minnesota went through an era of excited anticipation about agricultural development expected in the regions of the vanished woods. Fifty million dollars were spent in draining swamp lands, mostly to induce an agricultural boom in the deforested country—a boom which has not come. But Minnesota has watched fires sweep up out of smouldering peat bogs that cost fortunes to drain. It has seen conflagration feed on litter and consume saplings missed by the lumberjack. It has buried charred bodies by hundreds and has contemplated with horror the ruin into which careless lumbering and forest fires can transform loveliness.

And what is the Minnesota forest region like today? Much of that area is devoid of anything that could be called a forest. To be sure there are splendid examples of nature’s ability to heal and reproduce. Beauty spots along stream and lake shores are reminiscent of virgin woods of



Minnesota has watched devastating fire sweep through her forests time and time again

yesterday. Care and skill in directing lumbering in two great National Forests of Minnesota show that with seed trees left and adequate fire protection, lands can be made to yield continuous crops of pine. But unfortunately these are exceptions, like charming nooks in a gloomy landscape. Four million acres of cut-over lands are so nonproductive that the owners have ceased paying taxes. Two or three counties are only one jump ahead of bankruptcy, due to nonpayment of taxes and failure of land owners to meet installments on drainage liens. Five million acres, once bearing the richest white pine forests, have produced a second growth of poplar, for which there is still but little demand. Wide reaches of sandy country, originally the home of Norway pine, now yield only jack pine, scrub oak and other inferior trees.

As for the State-owned lands, there are now less than 2,000,000 acres. Half a million acres of merchantable timber stands on this remnant.



After a properly conducted timber sale—brush cleaned up, seed trees left to restock the land and fire danger kept to a minimum. The work was done under the supervision of expert foresters on the Chippewa National Forest

Ten years later. Note the fine growth of young Norway pine coming in under the shelter of the seed trees

Minnesota, showing more sanity than many states, has forty million dollars salted away in receipts from sales of lands and timber. This is the forest region's contribution to educational funds held in trust for the people of the State. The present size of the State-owned area is due to absence of any market for cut-over lands and to the wise practice inaugurated early in the State's history of retaining land when the timber was sold.

Most of the State-owned area has been administered after the manner of the old Federal public domain. As the United States land office disposed of national holdings, so the Auditor's office is by law the land and timber sales agency of the State. Under the land office administration, sales of timber from State lands have proceeded two or three times more rapidly than replacement by growth. Cutting has fluctuated with the demand for State timber, and the demand has increased steadily as private holdings have

gone to pot. Official reports of the State Auditor show while the lumbering industry has dwindled away, larger and larger values have been taken out of State-owned timber, so that average annual sales of State timber have been greater since 1920 than during the decade between 1910 to and including 1919. According to the present Auditor's records, sales during his régime have averaged more than 50,000,000 board feet annually. With a record of 87,855,192 feet, in 1926, he sold more timber than the State had parted with in any other single year in two decades.

But the gravest indictment against the present system of handling State timber is not the rate of disposal so much as the condition to which the cut-over lands have been reduced. The State Forester declared in testifying before the Legislative Reforestation Commission that cutting regulations have been ignored, seed trees have not been left to restock the land, fires have run through the debris-littered cuttings; and so, according to official reckoning, two-thirds of Minnesota's lands are now devoid of merchantable wood growth. On adjoining areas in the Chippewa National Forest, it was found that on National Forest land seventy-eight and one-half per cent of the reproduction was Norway pine and on the State land nineteen and six-tenths per cent. Natural reforestation of State lands has been delayed or prevented by careless lumbering.

Out of its 2,000,000 acres, Minnesota has reserved 400,000 in State Forests. These stand in the same relation to

the remaining State land as did the National Forest Reserves to the public domain previous to 1897 when the law outlining the present policy of administration was passed. They are not open to settlement or lumbering. The State Forests are in charge of the State Forester, Grover M. Conzet. The State Legislature has provided no money for tree planting and no personnel, authority or equipment to assure that these State Forests shall be forests in fact as well as in name. Proposals to enlarge them out of the State's domain come recurrently before the Legislature, and

thing reminiscent of the old-time timberman's attack upon conservationists. He called upon both foresters to resign. In referring to the old Federal Bureau of Forestry under Pinchot, Senator Charles W. Fulton of Oregon once told his colleagues: "The truth is this bureau is composed of dreamers and theorists." Perhaps some time and somewhere the State Auditor had read of that remark. He declared that Dr. Zon and Mr. Conzet had "a joint record unmarked by achievement," and made the statement that they were "theorists to the end."

But Dr. Zon is a distinguished forester. Mr. Conzet, confined by State laws largely to the duties of fire warden, has an admirable fire fighting record to stand upon. They have held their ground against the land office policy of handling State timber. They have made their arguments stick.

Recently in a statement to the Legislative Reforestation Commission, the Auditor has agreed to one of the fundamental propositions laid down by his critics. He now advocates that he be divested of his authority over



The results of cutting improperly done, on State-owned lands. Note the brush, the waste and the scrawny remaining timber—very little but birch and poplar. This tangle is a bad fire trap

And ten years afterwards—the present condition of such land following careless cutting and fire—not even a second growth of jack pine or poplar



occasionally their extent is increased. But it will be remembered that Grover Cleveland refused in the final years of his administration to augment the National Reserves because no special provision had been made for their protection. Minnesota conservationists have moved slowly in this direction for the same reason. The present State Auditor has been quick to point out the flaw in plans which would lock up the timbered region in State Forests.

But now a controversy between the State Auditor and the State Forester over lumbering on State lands carries Minnesota toward a prospect of better days. Dr. Raphael Zon, Director of the Lake States Forest Experiment Station, at St. Paul, precipitated the argument in April, 1928, with some pertinent remarks about the State's lack of a forest policy. State Forester Conzet confirmed his criticisms of timber sales. State Auditor Chase burst out with some-

timber sales and that management of all State-owned timber and timber lands be given to a reorganized and expanded State Forest Service. On recommendation of the State Forester, he has announced that no sales of state timber will be held this autumn. Disposal of Minnesota's public timber has come to a complete stop, pending perfection of legal means to handle it on a forestry basis.

Minnesota now awaits the report of its Legislative Reforestation Commission, headed by Lieutenant-Governor W. I. Nolan. It is composed of able and diligent men. The Commission undoubtedly has drafted a bill by which forest management of all State-owned timber lands can be established soon. Big things are hoped for from this commission and from the spring legislative session. Minnesota seems about to bring forth a workable State forest policy. The battle for forest conservation progresses on a lengthened front.



The danger of fire in the woods is double-edged—one may roast or freeze with equal ease. It is almost as hard to start a fire in winter or rainy seasons in a vast wilderness—if unprepared—as it is to put one out

Fire and Fireless Hazards

By GILBERT IRWIN



ALL experienced campers, anglers and outdoorsmen know the calamity wrought by forest fires and are constantly on the alert lest they endanger themselves and others by starting a fire in the woodlands. This calamity causes great property damage, devastates woodland-fringed farms, lays timberlands to waste and blots out every form of vegetable or animal life in its path.

Fire is terrible in city or town where there are improved means of fighting it, but deep in the forests where there is abundance of tinder, long lines of flame will gain great headway quickly. Of course expert forestry has developed noteworthy resistance, but under unfavorable conditions the best efforts are not good enough and tremendous losses result. It takes the full space of time to grow a tree or a forest which fire will destroy in a few hours, hence the necessity of constant vigil by all who enter the forests.

But while one is in danger from fires when in the timberlands, one can be almost as greatly imperiled by lack of fire. At times it is almost as hard to start a fire as it is to put one out. The question of fires in the woodlands is something of a double-edged minacity. Caught in a forest

fire one may be spared the cost of cremation by being reduced to ashes ere he is prepared, but when one's match supply becomes exhausted far from habitation, especially in high altitudes or in the cold hunting season, one faces refrigeration instead of the pleasures of the outdoors.

All real sportsmen give the match, or other sure fire making devices, about as careful attention when outfitting their hunting and fishing trips as they do cautions for preventing and extinguishing forest fires, for means of obtaining a quick fire for thawing out after a hard day on the trail and for hashing up filler for hungry sportsmen is probably one of the most vital things to remember. This is especially true when you camp far from human habitation, which is very often the case if you get into the real game sections. You must help to keep the woods fireless and at the same time be absolutely certain that your camp will not become a fireless one. Carelessness in either case is inviting danger.

That there be no slip-up on having the necessary bits of phosphorous-tipped wood always at hand some sportsmen even go to the caution of unscrewing butt plates from their guns and stowing a reserve match supply wrapped in paraffin paper or tinfoil in the cavity in the end of the gun

stock, or they do the same with fishing rods by removing the ferrule and filling the handle of the rod with matches. You can never tell when matches carried in pockets or in camping equipment may accidentally become water-soaked and useless, and you have little idea how dire the calamity of no usable matches when you are away back in the mountains until you face this misfortune.

Of course you can resort to cave-man methods of rubbing sticks together or try out some of those old Indian or pioneer slow tricks of fire-making, but, to say the least, they are long detours from shivering and freezing to a comfortable camp fire. And accidents will happen even to the most experienced hunters and in the best regulated camps, although not so frequently as with the unskilled and reckless sportsmen, the timorous snipers who make things more dangerous in the hunting regions for other hunters than for game.

There was Andy Slick's camp, for instance, located away back in Sinnemahoning wilds of Penn's Woods, as Pennsylvania state forests are familiarly called. Each year that camp brought down the well antlered bucks and usually hung up a bear or two, and when the party took to the woods in big game season it was always with a full roster and usually a waiting list. Things had gone like clockwork for a number of years in Andy's camp and so they did last season for more than a week and then that fireless camp jinx paid the outfit a visit.

It was one of those pinchy December evenings with ground well covered with snow—just the temperature and hard going that make the best deer hunting weather, and also make the sport sort of an endurance contest. But with real hunters weather conditions and discomforts do not cut much figure and a good tracking snow keeps them on the trails and crossings until twilight in the hope of getting another chance at some elusive buck or bruin. Back at camp is that roaring fire to thaw you out and a steaming supper waiting to fill you up—this is the consoling thought of the weary nimrod, and an ample antidote for long hours trailing

and watching in tangled under-growth or dense forest.

The twilight hike to camp is a little more strenuous when your party happens to bag a 200-pound eight-pronger just when darkness comes, for it is manual labor to pack such a prize half a dozen miles up and down the old tote roads grown up with brush and briars. That's just what happened at Andy Slick's party one evening at the end of their first week's hunt away back in Sinnemahoning wilds. Four nice antlers were hung and freezing away down at camp and here was their fifth, and it was long after dark when they packed in this last unit of their camp limit. Usually they were greeted by that roaring wood fire, camp all lighted up and the steaming pots and kettles filled with savory viands which the cook knew how to hash up to suit the hungry hunters. But no such pleasant sight greeted those hunters that night when they swung wearily but joyously into camp with their big hunk of mountain mutton.

No fire, no supper, everything ice cold, was their reception, and they listened to cook wail out his tale of woe; fire gone out and match supply entirely dissipated, a sure-enough calamity, for it was miles to another camp or to a mountain farmhouse, and so the cook had shivered and waited for the

return of the hunters. The honest-to-goodness nimrods like Andy and his party who go away back into the wilds where game is most plentiful and where they don't annoy the farmers have a big handicap on the more timid and it is only once in a blue moon that their well planned game campaigns happen to become scrambled or run amuck. It's just a revival



It takes a lifetime to grow a forest which fire can destroy in a few hours—hence the necessity of constant vigil by all who enter the woods. This is a good example of a well-planned camp fire, safe and sane

of that trite old saying of Bobby Burns about mice and men when your match supply goes punk away back in the forest, and it certainly knocks the props from under the high fettle produced by packing in the carcass which gives your camp a perfect score for antler getting.

A hasty search of pockets by the hunters failed to produce a single match, and there were no better results when they hunted everywhere one might possibly be cached. Then those hunters went straight up in the air—that is, all except Andy Slick, for they were getting colder and hungrier every

moment. Andy, captain and boss of the camp, just turned up his hunting coat collar, sunk his hands into pockets and stepped around to think and limber up his freezing toes while the others swore and raved. But that was one occasion when blasphemy failed to raise the temperature, as it is often credited with doing; it did not even ease up a bad situation, for things were becoming worse every moment.

Presently Andy stamped around to his locker and fished out his searchlight, and he told others to dig up a couple more of the emergency light makers, and they did so in a hurry, although they could not sense the affinity between flashlights and a camp fire and supper. The captain of a big game camp in which proper discipline prevails is an expert hunter and is fertile in resources of the outdoors. He is trusted and obeyed implicitly by his followers and is looked to in times of difficulty to put matters aright, so there was no delay in executing Andy's commands.

He motioned several of the party toward a flivver parked near the shack and they rolled it right up to the door. Then he dug into the car and from somewhere brought out a roll of insulated wire. With aid of the searchlights he removed a sparkplug from the car and attached his coil of wire to the terminal wire and strung it into the camp to the fireless fireplace. He attached the plug to one end of the wire, wrapping the connections with tire tape. By this time those glum hunters and the scared cook were jumping around trying to help. Andy told them to build up a tinder pile in the fireplace, which they quickly did with whittlings from dry wood mixed with pine branches and cones, and Andy added some oily rags and waste from the car.



AFTER FIRE

ETHEL ROMIG FULLER

Fire once had
Its way with these
Bleached trunks
When they were living trees.

Fire which raped them
Leaf and bark
And gave them over
Quivering, stark,

To wind and rain
And sun and snow—
But that was long
And long ago.

Today are ghastly boles
Where were
Pine and cedar,
Spruce and fir;

Ghosts that haunt
The hills, or quake
Like frightened shadows
By the lake.

Next he hunted up an old tin can and drained half a pint of gasoline from the car tank which he gave to one of the party, stationing him at the tinder heap and telling him to douse the heap when he should give the signal. Then he showed another how to hold the wire with the plug close to the mass.

Andy then went out to the flivver, threw her into neutral, hunted up the crank and set himself to spin the engine with the ignition on. Then he yelled and cranked and after a couple of turns there were yells from within the camp, for the gas-soaked heap of wood and waste gave forth a streak of flame, nearly gassing his assistants. Just because that resourceful camp captain happened to know his battery primer that camp was no longer a fireless one, for the sparkplug fired the gas-soaked heap just as it fires gas in an engine. Hunting skill, woods and game lore and a seasoning of concrete knowledge of new ideas rout the jinx back in the forests where a hunting party must act on its own initiative. The cook fell to work and in an hour or so had a fair camp meal ready. The hunters devoured it and renewed their usually happy mood, and things were again on schedule in Andy Slick's camp.

"Don't mention your old Indian fire-making stunts to me," Andy will warn you, "for batteries have more uses than you could think of in a week. Next time we go camping I'm going to rig up

a battery foot warmer and maybe I'll figure out some stunts for easing up buck and bruin hunting with spark juice."

That fire-making stunt will work. Try it out some time at your leisure before going into the wilds, if you like, and then just paste the stunt in hunting cap or on camp bulletin board.

Since the announcement of the Southern Forestry Educational Project of the American Forestry Association several months ago, plans of operation in Florida, Georgia and Mississippi have been completed and the personnel established under the direction of W. C. McCormick, regional director. By the time this issue is in the mail the Association's forestry educational trucks will be in the rural districts of the three states.

In the November issue of *AMERICAN FORESTS AND FOREST LIFE* a clear analysis will be given of the actual working of the Project, with the complete story of its realization after more than a year of effort by the Association. Watch For It.

Is Death From Freezing Accidental?

Or Rather, Is Death From the Elements While Hunting "Accidental" Within the Terms of an Insurance Policy?

BY LESLIE CHILDS

THE question of when and under what circumstances death in the hunting field will be held accidental within the meaning of this term as used in insurance policies is one of considerable interest to sportsmen in general. Of course, if death results from shooting, a fall, drowning, or other direct contact mishap, there will usually be no doubt of its accidental character from an insurance standpoint.

On the other hand, where a hunter loses his life through exposure to the elements, or other causes which on their face cannot be classified as accidental, a situation of some difficulty may be encountered. And since each case of this kind must necessarily be decided in the light of its facts, the subject cannot be covered by a hard and fast rule. However, as an illustration of judicial reasoning on one phase of this subject, namely, death from freezing, the recent Michigan case of *Ashley vs. Agricultural Life Insurance Company*, 217 N. W., 27, may be reviewed with interest.

In this case, one Ashley carried a life policy with the insurance company in the sum of \$2,000. The policy contained a rider which provided for the payment of an additional \$2,000 in the event of the death of the insured under the following conditions:

Death "resulting from bodily injury, sustained and effected directly through external, violent and accidental means—murder or suicide, sane or insane, not included—exclusively and independently of all other causes, provided such death shall occur within ninety days from the date of the accident."

While this policy was in force, the insured and a companion were camped at Moran, in Mackinac County, Michigan, hunting deer. It was in November, and on the day of the accident out of which this action arose the insured and his companion, with a guide, left camp and drove nearly twenty miles to some hardwooded upland.

Here they left the car and separated to hunt, with the understanding that they would meet at the car later in the day. The weather was pleasant when they separated, but in the afternoon turned cold, with wind and snow. The insured did not return at the appointed time and his companions began searching the surrounding country for him.

They picked up his tracks where he had been trailing a deer and followed them for nearly three miles to the edge of a large swamp. At this point his tracks led in all directions. They found a spot where he had attempted to start a fire, and it was apparent that he had become confused and lost.

Upon failing to find him, his companions gave the alarm, and aided by woodsmen and State troopers the search was continued. A few days later the insured's body was found frozen stiff in the swamp, with his feet, hands, and a part of his head frozen into the thin ice that covered that part

of the region. It was apparent that the insured had lost his bearings and wandered around until overcome by exposure and frozen to death.

On the above state of facts the insured's mother, as beneficiary named in his insurance policy, claimed that she was entitled to \$2,000 because of the death of the insured, and an additional \$2,000 under the double indemnity clause which provided for this payment in case death was accidental. The insurance company denied the latter claim on the ground that the death of the insured was not accidental, within the terms used in the policy.

The instant action was thereupon brought on the policy, and the trial court allowed a judgment for \$2,000 and interest only. From this judgment an appeal was taken to the Supreme Court of Michigan, which squarely raised the question of whether or not the death of the insured, as it has been outlined, was accidental. In reasoning upon this question, the court, among other things, said:

"Insured's becoming lost was not by design, volition, or intent. It was not an expected or usual incident of hunting. It was unusual and unexpected, fortuitous. He became lost accidentally. . . . His death was caused by accidental exposure to storm and frost.

"Freezing in and of itself is not an accident. . . . But if joined with a fortuitous, unusual, unexpected circumstance or event it may constitute an accident. . . . Deceased suffered an accidental death. But it is contended that it was not produced through accidental means or 'through external, violent, and accidental means.' . . .

"The authorities are not in harmony with respect to a distinction between accidental death and death by accidental means, but, conceding the distinction, we find no difficulty here . . . The authorities are quite in accord in holding that where one has fallen into water involuntarily and drowned, the death is through external, violent, and accidental means.

"Water is not an accident. But the fall which preceded the drowning, being unforeseen, unexpected, accidental, the water connected with the fortuitous mishap, the fall, became the accidental means, the instrument of death. So here insured became lost accidentally and thereby suffered accidental and enforced exposure to storm and frost and thereby died.

"The storm and frost were, in the season of the year and in this latitude, usual incidents of weather. They were not accidental. . . . But because of the insured's accidental exposure to them, the storm and frost so joined with the exposure became the accidental means of death. We see no difference in principle where one mistakenly and fortuitously loses his way and falls into water to his death, and where one mistakenly and fortuitously loses his way in the forest

and thereby falls a victim of the elements. . . . Reversed with costs to plaintiff—beneficiary in policy. As the question is of law, the cause is remanded for judgment in favor of plaintiff for the full amount."

After a diligent search of the books, it is believed that the foregoing case establishes a precedent in respect to the facts involved. In other words, it appears to be the first case of its kind arising out of a death from the elements in the hunting field which squarely raises the question of whether death was accidental within the terms of an insurance policy.

The decision, therefore, becomes one of unusual importance, as it tends to establish a precedent which, on account of the persuasive reasoning upon which the holding is based, is likely to be looked upon with favor by other courts.

In the light of the subject-matter out of which the action arose, the case is one of more than passing interest to sportsmen as a clarifying pronouncement of circumstances under which a death in the hunting field caused by the elements may be held accidental, within the meaning of this term as employed in contracts of insurance.



Motorcade Inaugurates Southern Forestry Educational Project

"Stop Woods Fires! Growing Children Need Growing Trees!"

A MOTORCADE of eighteen automobiles, formed about a nucleus of the five forestry educational trucks equipped by The American Forestry Association and cooperating organizations for the Southern Forestry Educational Project, traveled from Atlanta to Waycross, Georgia, to open the second State Forestry Fair, September 19 to 21. The motorcade was under the direction of W. C. McCormick, regional director of the project for The American Forestry Association. Because of the wide and enthusiastic interest in the motor trucks and exhibits, the motorcade stopped en route at a number of Georgia cities to give demonstrations in the interest of preservation and development of forest resources. Immediately at the close of the fair the trucks left for widely scattered points in Georgia,

Florida and Mississippi to begin the three-year program of forestry education as contemplated by the Association's Southern Forestry Educational Project. The slogan,

"Stop Woods Fires! Growing Children Need Growing Trees," stands forth against a red background on the panel sides of each of these trucks. Bolted to the floor of each truck is an electric generator to furnish power for operating a motion picture projector. Stored within the trucks, available for showing, are several forestry films. These include "Green Barriers"—a vivid portrayal of the effect of woods fires upon forests, range and wild life; "Pines That Come Back"—showing how forests quickly reestablish themselves if protected from fire; "Dual Purpose Trees"—the story of the turpentine industry; "Pines from Seed to Sawmill," which depicts the dependence of the lumber industry upon the forest, and "Trees of Righteousness"—an inspirational film dealing with forest fire prevention.

Each truck is handled by a team of two men. The unit director precedes the truck to arrange the itinerary with the county superintendent of schools, the county agricultural agent, and other local leaders. He carries with him charts and lantern slides to illustrate the talks which he may give before local luncheon clubs, women's organizations, and other groups in the counties visited.

With such an enthusiastic start-off, the Project seems assured of a hearty reception throughout the three States.



Forest Flashes from the South

By W. R. MATTOON



"Horny" trees like this shortleaf pine have grown up without restraint like children without training or discipline. They are good only for fuel and their value for that use is small.



No wonder Mr. J. M. Stokes is proud of this loblolly pine tree. "I plowed corn," he said, "on this field until I was nearly grown." The tree is about 40 years old and measures about 30 inches in diameter and 50 feet tall, standing in Kemper County, Mississippi



The owners of farm woodlands are now learning in the "school in the woods." By marking for cutting out the poorest kinds of trees and the cripples and sick ones they are practicing "horse-sense," giving the sound timber a chance. These farmers live in Union County, North Carolina

Some Rocky Mountain Grouse

By HOWARD R. FLINT

With Photographs by the Author

IN approaching one of the grouse family for purposes of study or photography, one must avoid three common errors in tactics. Too sudden or hasty an approach, too direct a line of approach, or any attempt at concealment or "sneaking up" on the subject usually results in failure. With due observance of these rules, however, and with the exercise of considerable patience and perseverance dusky grouse, Franklin's grouse, gray ruffed grouse, and ptarmigan have been approached. In many instances the bird appeared to be charmed by the human voice.

The most difficult to approach is the gray ruffed grouse (*Bonasa umbellus umbelloides*). This bird is of an extremely nervous and erratic disposition, and this, coupled with his habit of constantly keeping to cover, makes him a most difficult subject for the student photographer.

Franklin's grouse (*Canachites franklini*), commonly and very logically dubbed "fool hen," is most easily approached of all western grouse. Often in its case any rules of the game, or all of them, can be abrogated without risk. The southern white-tailed ptarmigan (*Lagopus leucurus altipetens*) is not especially difficult to approach, but because of his predisposition for a home that is seldom out of close proximity to a snow bank, he is not often the target of man's curiosity.

Ordinarily the dusky grouse (*Dendragapus obscurus*), including the two or more races or geographic varieties found in the Rocky Mountains between southern Colorado and the Canadian boundary, is regarded as a very wild game bird, extremely difficult to approach and study. But in areas where the bird is protected for even a comparatively short period, it not infrequently becomes the most docile of our native grouse, readily accustoming itself to the presence of human beings and displaying, if anything, less fear than some of the more nervous varieties

of barnyard fowls. From the sportsman's point of view, the dusky grouse is a splendid bird with which no other western grouse can compare. He is resourceful, shifty, swift of flight, and when hunted is well able to tax the patience of the most enthusiastic sportsman. When he rises on roaring wings and plunges like a projectile through the brush he makes a shotgun target equal in every way to his cousin, the ruffed grouse. Treed, his slender head and neck furnishes a mark for the rifle well worthy of the skill of our squirrel hunting forbears. Indeed, it often takes a keen and a practiced eye to locate him after he has alighted in the top of an isolated tree.

Hunting the dusky grouse is not a task for the feeble or indolent, for he is rarely found on level ground and is not often killed from that modern Juggernaut of game bird life, the automobile. Indeed, a vast part of the country inhabited by the dusky grouse can be successfully negotiated by man only on foot. A few can be reached by horse travel on the thousands of miles of trails opened in the past few years by the United States Forest Service, but where he is at all closely hunted the dusky grouse promptly takes to the rugged fastness of subalpine and alpine country where the multitude will not follow.

There seems to be little danger that the

hardy, resourceful dusky grouse will be hunted to the verge of extermination if given reasonable protection during the breeding season. The officials of the National Parks and National Forests are now giving this in good measure over perhaps a hundred million acres of his native habitat. His cousins, the prairie hen and the sage grouse, have not fared so well, however, and their fate seems certain.

Enemies, both furred and feathered, the dusky grouse has in abundance. Coyote, bob-cat, lynx, marten and badger all pursue him on the ground with diligence and with some

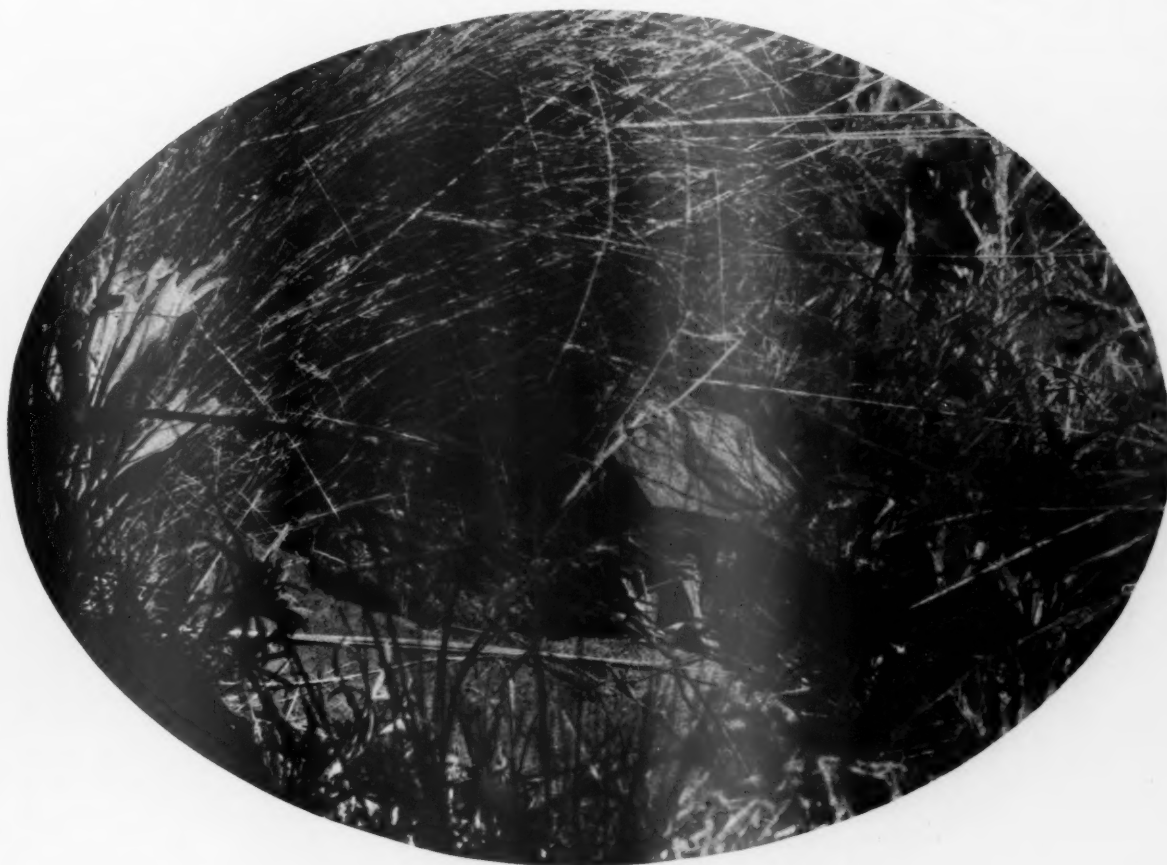


The vagabond of the grouse family, the ruffed grouse. He is extremely nervous and erratic and has a habit of constantly moving around, keeping well to cover at all times

measure of success. He must watch the air for hawks by day, and at night he is menaced by the western horned owl. These things he has evaded with success down through the ages and will continue to do so, especially since man, the arch extinguisher of wild life, has thrown the weight of his campaign against predatory animals into the balance in the grouse's favor. Probably the most destructive natural enemy of the dusky grouse is the western goshawk, the swiftest and ablest bird of prey within all the grouse's range.

than his winter diet; but even in early autumn, when fruits, grasshoppers, seeds and leaves abound in great variety, I have found crops packed with the bitter resinous needles and twig-tips of Douglas fir. Even in the close proximity of an abundance of other food this staple is often taken from choice.

There is a popular belief, apparently shared by some ornithologists, that during the late summer and early autumn the dusky grouse subsists chiefly on a grasshopper diet. During



A well concealed nest of the dusky grouse under a clump of fescue. To this busy mother the camera is but an incident that must not interfere with her chief interest in life

No bird along the great range of the Rockies is better adapted to survive the uncertainties of mountain winters than the dusky grouse. Snow holds no terror for him. He rises above it by taking to the trees; in the deep canyons and dense coniferous timber there is always shelter from the wildest of storms. Nor is food at such times a matter of deep concern, as the dusky grouse seems able to thrive for months on the buds of shrubs, especially on the needles and buds of Douglas fir. I have found him wintering successfully and vigorously on top of five feet of snow at 10,000 feet above the sea in southern Colorado, at 9000 feet in Wyoming, and at about 5000 feet in Idaho.

The summer food of this bird is spiced with more variety

the last twelve years I have had many excellent opportunities to observe both young and old while feeding, often with the aid of a good binocular. All my observations and notes point to a vegetarian diet seasoned by only a few insects. Many kinds of plant leaves, buds, and flowers are eaten. Strawberries, huckleberries, raspberries, gooseberries, currants, wild rose fruits, bearberries, and the bitter buffalo berry are taken freely. Both the leaves and fruit of bearberry are staple articles of diet. The fruits are probably taken only for the dry, mealy flesh, since it seems improbable that the stony seeds are ever digested. When the seeds of the Douglas fir were ripe a very large percentage of the birds examined in southern Colorado were found to contain

at least a few of them. One bird had very recently eaten 231 Douglas fir seeds, ninety-three bearberries, seven rose fruits and one ant, an unusually large breakfast. A young bird had fed principally on grass and the leaves of a small wild pea vine. Another killed in early September at nearly 12,000 feet altitude in southern Colorado had fed principally on the leaves of a dwarf alpine willow with a few nearly ripened carpels of marsh marigold. In the records of some twenty stomachs from birds taken under a wide range of conditions and locality, often in the presence of great numbers of grasshoppers, the largest amount of insect food I have recorded for individual cases is three grasshoppers and one ant. I have found it rather unusual to open a bird that does not contain at least a few of the leaves

he bursts forth in sound, though never in song, during the mating season, and is quite audible during the morning hours in May and June. In one authentic case of record, his



A male Franklin grouse in full plumage, standing at the foot of an Alpine fir, the needles of which form a very important part of his diet

A Franklin grouse, the beautiful "fool hen" of the mountainous districts

deep, far-carrying cry was heard in northern Montana as late in the season as July, after the chicks were hatched. A peculiar loud rattling sound which often mystifies mountain travelers in the spring and early summer is made by this bird and is doubtless analogous to the drumming of the ruffed grouse. He produces this sound by leaping from the ground into a tree top, rattling the stiff wing feathers as he rises.

In southern Colorado in April, at an altitude of 9300 feet, while only patches of ground were free from snow, one especially vigorous cock was observed for a considerable

of some of the coniferous trees, most often Douglas fir.

The mating habits of the dusky grouse are distinctive, but similar to those of many other Gallinaceous birds. Ordinarily an extremely quiet and unobtrusive mountaineer,

time. He stood proudly on a prostrate tree trunk under a group of large Douglas firs. Neck ruffs were raised to show the red skin beneath. While he posed and ruffled in this manner, his head would jerk at intervals as he uttered

a low-toned, resonant "booming," with such carrying qualities that could be heard at a distance of a quarter of a

"toot," often audible for a mile or more, was given, and I have never been fully satisfied as to whether the sound came from the male or the female, although I have always suspected the former.

There was a mother grouse nesting near a ranger station, and she was not greatly disturbed when cameras were set up within three feet of her and photographs taken. After many days' observation she appeared near the station with seven fluffy chicks. Neither the young nor the mother grouse showed more fear of human beings than do ordinary domestic fowls. And even while they were growing the little fellows were easily caught and appeared not in the least to mind being handled. They remained near the ranger station until they were half grown.

The nest of the grouse is usually found in shallow hollows on a well-drained slope. It is lined with grass, and almost perfectly concealed by overhanging stems and leaves of a dense clump of fescue. The eggs are cream colored and nearly as large as small hen's eggs. Generally eight eggs will be found in a nest, but of course the number will vary. Doubtless many nests are destroyed by coyotes and other prowlers, and on range frequented by cattle and sheep an occasional nest may be damaged or trampled. When

flushed from the nest, I have never known a mother bird to go more than a few rods away, contrary to a rather common belief that grouse abandon their nests on the slightest provocation. The mother grouse at the ranger station returned time and again after having been repeatedly frightened away.

The chicks are hardy little fellows who survive frosty mornings, wet grass, and cold mountain showers. They can fly when but a few days old. Even when very young, when suddenly frightened they scatter and take to the trees and "sit tight" until called together by an anxious mother. Those I have seen seem much less wild than young prairie chickens and ruffed grouse. I have known of a number of instances in which they have voluntarily taken up residence on the grounds of a human habitation.

From these observations of the habits and characteristics of the grouse, it would appear that sportsmen's clubs throughout the areas inhabited by this bird might well experiment with the propagation in captivity of this splendid American game fowl.



A female southern white-tailed ptarmigan in summer plumage. These birds become nearly white during the winter months

mile. This splendid fellow seemed not in the least afraid and "crowed" repeatedly with the observer in plain view and only about thirty feet away. After a while he dropped to the ground, spread his long tail fan-wise, ruffled his feathers and strutted very much like a barnyard turkey-gobbler. I have never been so fortunate as to be a witness when the long



When surprised, the canny dusky grouse will often attempt to escape detection by sinking slowly to the ground in this very characteristic posture

The Playground of a Metropolis

By HARRY S. WISWELL

THE present real-estate boom in metropolitan New Jersey is fast crowding the wild life into a dream of the past. The fields and thickets where once deer roamed and pheasants whirled are giving way to home developments and business streets. In the midst of this construction a large tract of wooded land, lakes and mountains, is being preserved in its wild state, so that future generations may know our country as it was.

Situated in the New Jersey towns of Scotch Plains, New Providence, Springfield, Mountainside, and Summit, twenty miles from New York City, is the Watchung Reservation of the Union County Park System, with an area of 1,800 acres and embracing parts of both First and Second Watchung Mountains. It is the intention here to preserve the hills and glens in their wild state, to allow birds and wild animals to roam as they will, and provide a haven for the tired city-dweller. In the midst of this domain is Peckham's Tower, five hundred and seventy-five feet

above the sea level, from which the beautiful harbor of New York may plainly be seen on a clear day.

The area is a paradise for a silviculturist, being mainly of a mixed hardwood type. There are more than sixty-five different species of trees here and seventy-three species of wild shrubs. Spring and summer transforms the lower canopy to an almost solid mass of white, blossoming fragrance, due to the abundance of dogwood and wild flowers, of which 140 different species are found. In the Blue Brook Valley, between the mountains, is Surprise Lake—a surprise indeed, hidden from view from all sides by wooded hills. The lake shore is bordered by overhanging trees, offering fine vistas, where land and water meet. Fine specimens of perch, pickerel, bass, and catfish are caught here. There are boats and boat landings, swimming is encouraged, and diving piers increase the sport. Bathhouses are convenient to the shore.



A mass of blooming beauty is the creamy canopy of dogwood on the sloping banks of Lake Surprise, in the Watchung Reservation, in early spring



Sunlight glinting through the trees throws a vertible garment of lacy shadows on one of the many lovely woodland paths in this great playground

An area has been set aside, on the northerly side of the lake, for the summer camp of the Boy Scouts. Each year more than fifty boys enjoy the summer in the open, swimming, fishing, and hiking. It is surprising to find a wild area such as this within twenty miles of New York City.

The fact that this extensive and beautiful tract is a portion of the Union County Park System is an assurance that business-weary city-dwellers will always be able to enjoy the fascinations of life in the outdoors, even after all the other outside wooded area has been fully developed.

PRESIDENT COOLIDGE COMMENDS PLANTING

The President has written cordially commending the enterprise of the Michigan State Kiwanis in the planting of four million trees on 5,000 acres of denuded land on the Huron National Forest in Michigan. A similar project was carried out by the boys of the Order of DeMolay in the State of Washington in financing the planting of 100,000 trees, for which they were also commended by the President. As far as is known, this is the first time in the history of forestry that personal expression of appreciation and commendation of such work has been given by the President of the United States.

In his letter to Harry B. Black, president of the Michigan Kiwanis, President Coolidge said in part:

"In underwriting the planting of 5,000 acres of Federal land you have made a substantial contribution toward the solution of one of the most urgent problems before the American people today, the maintenance of adequate timber supplies for the needs of the Nation. I am informed that you propose to continue the good work and next year to underwrite the planting of a second 5,000 acres. It is very gratifying to me to know of this.

"I wish that you would convey to the members of your Order my appreciation of the work they have done and the spirit in which it has been undertaken. It will serve as an example and encouragement to all who are giving thought to our forest problems and who seek a way to give expression to that thought in practical useful accomplishment."

And in his letter to Ebert Rhodehamel, Chairman of the DeMolay State Reforestation Committee, the President said:

"I am very glad to hear of the patriotic work in reforestation which is being done by the members of the Order of DeMolay in the State of Washington.

"The thanks of the Government are due these young men for their cooperation in restoring the forest growth on Federal land in the Columbia National Forest, and I want to congratulate you and the members of the Order in the State of Washington both on the work that is being done and on the spirit in which it has been undertaken."



EDITORIAL

Commerce Draws from the Forest

PRESIDENT COOLIDGE'S appointment of William Fairfield Whiting, of Holyoke, Massachusetts, as Secretary of Commerce to succeed Herbert Hoover, pays a particular compliment to the forest industry. Mr. Whiting is president of the great paper company which bears his name, and is widely known throughout the country, especially in the circles of this important industry of the forest.

Quite obviously Mr. Whiting is on very intimate terms with the forest conditions of the nation. As a manufacturer of paper he is acutely concerned about the future forests as a source of raw material. He knows the value of a single tree as well as the vital necessity for conservative forest management to ensure a continuous supply of pulpwood in perpetuity. He knows in terms of dollars and cents the value of the elimination of wood waste in the manufacture

of forest products; and he is sympathetic with any effort for the furtherance of forest research.

As the national leader of our commercial destinies, Mr. Whiting will undoubtedly prove a friend to the forests and forest industries. His background and appreciation of the underlying significance of forest values should assure able and judicious action whenever forests or forest products are involved commercially. His vast experience in a field of forest use where the most acute problems have had to be met assures this and should hearten those conservationists who have perhaps felt that the importance of the forest interest in some of our great national problems of commerce has not been sufficiently stressed. Mr. Whiting's vision will only be broadened by the experience he will gain in steering the good ship Commerce, and the friends of the forest look confidently to him to see to her cargo of wood.

Recreation Resources of Federal Lands

TO provide places where outdoor life and recreation may be available to the public has been accepted as a duty of the Federal Government, yet with more than 585,000 square miles of public lands less than half is administered with that purpose in view. By far the greater portion of the Federal land so administered is in the National Forests. These forests, together with National Parks, Wild Life Refuges, National Monuments and other smaller areas aggregate nearly 145,000,000 acres of Federal land dedicated to purposes compatible with public recreation. Furthermore, any consideration of public lands for recreation purposes cannot omit the unallotted Indian Reservations whose 35,500,000 acres include 7,000,000 acres of forest lands.

With the country's growth and development the land policy has changed from one of state ownership to federal ownership. The thirteen original states assumed title to all vacant and unappropriated lands within their borders. Later, as states were formed out of territory acquired by purchase and treaty, mostly west of the Mississippi, such lands remained the property of the Federal Government. This explains why more than ninety-nine percent of the public areas

are west of a line drawn south through the Dakotas, along the eastern boundary of the Texas panhandle to the Mexican border.

These facts are gleaned from the recent report on Recreation Resources of Federal Lands, by a Joint Committee of the American Forestry Association and the National Parks Association under the auspices of the National Conference on Outdoor Recreation. Here are discussed phases of public recreation upon Federal lands which challenge the imagination. Wild life typical of American conditions, scenic possibilities without parallel, and wonderful opportunities for outdoor adventure are all found within these areas.

As may be expected, special attention is given the recreational possibilities offered by National Forests and National Parks, and members of The American Forestry Association have reason for pride in the part the Association has taken in the preparation of this report. It promises to occupy a place of growing influence in the development of a national recreation policy. Not the least important is the clarity with which is stated the several functions of National Forests and National Parks in the present program. The report

states "that the National Forests and National Parks embrace the most important recreation assets under Federal administration. There is, however, a very distinct difference between the recreation policy of the National Park Service and that of the Forest Service. That of the Park Service is to provide safety, comfort and facilities for observation to visitors of all kinds, degrees and ages to these superlative national spectacles; that of the Forest Service to afford visitors to National Forests the completest possible freedom in enjoying the wilderness, each after his own chosen fashion."

The great area now in Federal ownership and the accepted principle of good government to protect the interests of posterity while encouraging present use leads the committee to say: "A national recreational policy must be projected far into the future. Present-day problems are insignificant as compared to those that must be met when our population will have greatly increased and demands for recreational

outlets will have become many times intensified." For this reason the first step proposed is to create a continuing agency or commission to assume responsibility for a Federal recreational policy.

Other steps follow which go to fill in the policy. Many of these would assure adequate annual appropriations for administering, extending and protecting the National Forests, National Parks, game sanctuaries and reservations and all other classes of Federal lands having possibilities for recreation. A legal definition of the status of recreation on National Forests as well as a definition of the objects and standards of the National Parks system is proposed. Included also is the suggestion that wilderness forms of recreation be applied to some of the Indian reservations, and the public domain be studied with a view to finding additional areas for public use. Many of these recommendations are in The American Forestry Association's program, but their incorporation in this report centers attention upon them.

Backgrounds for Judgment

THOSE who read the recommendations of Minnesota's State Auditor, Ray P. Chase, in the September number of *AMERICAN FORESTS AND FOREST LIFE*, will recall the historical background which brought about the anomalous organization which imposes upon the State Auditor the responsibility for timber sales from State lands while the duties of the State Forester are correspondingly limited. The recommendations made by Mr. Chase are so sensible and encouraging to good forest management that readers may well ask "Why the excitement?" The answer is that the State Auditor has been the target of severe criticism for his handling of State forest properties and his proposal to

relinquish the jurisdiction of his office over forest lands and to stand four-square for a constructive forest policy for the State is a real cause for rejoicing. Certain it is that Mr. Chase has now set his course in the right direction, and so long as he continues to urge needed measures of reform and sound forest policies he will have the support of The American Forestry Association.

Additional background will be found in Alfred D. Stedman's article in this issue. Some early history is repeated and the situation is brought up to date, all of which should help our readers, and particularly those in Minnesota, to act on the basis of knowledge and sound judgment.

Cooperation and Loyalty

A FORESTER must know trees, how to manage forests and how to protect them. He must know how advantageously to use forest products, how to satisfactorily dispose of them profitably, and how to renew the forest crop. Upon such as these are the courses in the study of forestry established, but with all his knowledge of technical and scientific forestry, the forester must be able to work with people.

Whether this idea has entered the minds of the hundreds of young men who are now starting their collegiate courses in forestry is a question. Naturally they are thinking of courses which promise to fit them for their chosen work. All else seems immaterial and youth is impatient. Consequently much that is to be learned does not appear in the outline of courses. Thus by indirection rather than through purposeful study the forest school encourages individual effort, initiative, willingness to accept responsibility, tenacity of purpose, accuracy, honesty, judgment, tact, vision and en-

thusiasm. Each is desirable, yet all combined fail in the development of a satisfactory man if the spirit of cooperation and loyalty is not present.

A forester may work with stands of timber, but he deals primarily with human beings. While he contributes to the production of a timber crop he will give unreservedly of his time and strength, yet there must be a spirit of helpfulness and cooperation with his comrades and loyalty to the organization with which he is affiliated. Team-play rather than individual display is wanted.

Perhaps the spirit of cooperation and loyalty is only a state of mind or a by-product of one's life experiences. Certainly it is essential to the forestry movement and to the foresters who lead it. The forester who realizes its importance while he is in college has an advantage over the man who must acquire it later—or perhaps who struggles through life in selfish independence.



Within range. Split seconds count here when the hunter must match his skill with the sure, swift flight of the river wild fowls. Oval—Game country, with the setters straining at the leash.



The Call of A

Photographs by H. AMST



When Autumn leaves begin to fall
outdoorsman turn to game, dog guns,
woodland and vale, or along the gray
his chosen sport ere the cold blasts of w
of the wild things in blan



The return of the woodsman. Big game may still be found if the hunter follows the wilderness trails and waters.



The f Autumn

H. ARMSTRONG ROBERTS



begin to fall the thoughts of the
me, dog guns, and decoys. Through
along the gray waterways, he follows
cold blues of winter wrap the haunts
ings in blanket of white.



The end of an Autumn day. With a last lingering glance at the game country, the hunter turns from the fascinating chase. Oval—Comradeship of the chase, the hunter and his dogs.



In the haunts of the Mallard and Canvasback. The huntsmen set out in the crisp Autumn dawn with their luring decoys.



The Cleansing Fire

By LOWELL OTUS REESE

Illustrated by Alfred G. Clayton

The Story So Far

EAGER to establish himself in America so he can bring his wife, Carlotta, from Italy, Johnny Onion, a sturdy little Italian, surrenders his small savings to Billy Tobias, a trouble breeder, for a worthless mining claim. But instead of giving up in despair when his efforts to mine gold were fruitless, Johnny cleared his land and put it under cultivation. He built a cabin and saved enough money to send for his wife, Carlotta. He loved America and Americans, especially Billy Tobias, because, to Johnny's mind, he had made possible this new-found happiness.

But Billy Tobias, pretending friendliness, and seeing in Johnny's location an ideal spot from which to direct his unscrupulous work, relocates the claim, telling Johnny that he is not entitled to it because he is not a naturalized citizen. His dream wiped out, and suspecting that he has been victimized by Tobias, Johnny attacks the man with a knife. Then, half dazed, he stumbles into the dense forest. After hours of madness—cold, wet and bleeding, he pauses to build a fire, then fights his way on, leaving it. Several times he does this as he pushes on, sobbing and babbling incoherent things.

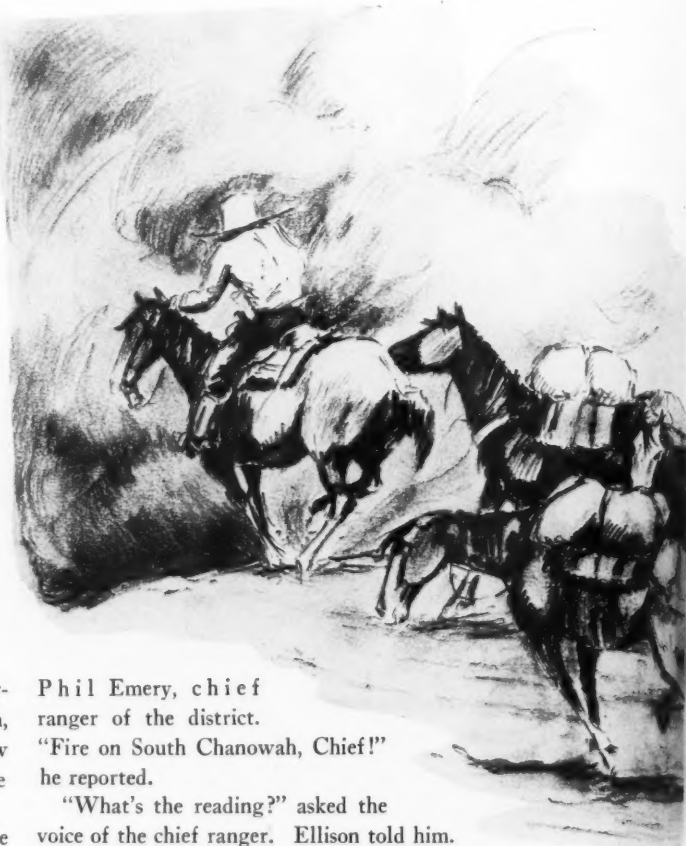
Part II

Sitting in his watch tower, perched upon the highest rock of the highest peak that broke the sky line above the Camasilla Range, Lookout Tom Ellison watched the wilderness of rough gulches and timbered ridges beneath them, down the long canyon of the Chanowah. It was such a view as would have met the eye of an eagle soaring high under the sun.

It was very quiet where Lookout Ellison sat. There was not even a breeze to make a faint noise in his ears. Alone upon that spear point of rock thrust against the sky Ellison experienced a near approach to absolute silence. A buzzard sailed across the still picture beneath him; but for this single living creature the world that he looked down upon might have been a dream.

Suddenly, Ellison leaned abruptly forward and peered intently. Down in the green trough of the Chanowah, and

twenty miles away, appeared a pale-blue vapor. The unpracticed eye would not have noticed it, for it was so nearly like the pale blue of the far ridges. The lookout reached for his glass and studied the suspicious vapor again. Then he became a very busy young man. Swiftly he worked over his mapboard with compass and thread. A moment, and he had caught down his telephone receiver and was calling



Phil Emery, chief ranger of the district. "Fire on South Chanowah, Chief!" he reported.

"What's the reading?" asked the voice of the chief ranger. Ellison told him.

"Wait, and I'll get the intersection from Parrott's Peak," said Emery. Ellison held the wire expectantly. "Deer Trail Flat!" the chief reported back.

Ellison hung up the receiver and sat watching the smoke. He knew exactly what was going on. Already the chief ranger was calling Watt's Station, three miles down the river from the Deer Trail. He knew that in five minutes Leck Morgan would be hurrying up the Chanowah, armed

with fire shovel and pliers; and if nothing happened the fire would be killed in short order. It did not seem a large fire, and apparently there was no wind down along the Chanowah. Ellison leaned back and started to load his pipe. Half way through the operation he dropped pipe and tobacco and again snatched down his receiver.

In his office, forty miles away, the chief ranger sat at the telephone. He had just finished giving his orders to Leck Morgan when Ellison called again. "Another one on the Chanowah, Chief!" he reported. "A little higher than the first one, and to the left." Hardly had he made his report when he broke in again.

"Two more, Phil! Still higher up and to the left. The four fires are on a long slant that will take the line over Horse Peak. Way the smoke is acting, I believe the wind is rising on the Chanowah. She's going to be a whale of a fire, Chief!"

"Incendiary!" muttered the worried chief ranger. He rang for his colleague, the chief ranger of the Chenan Valley district, beyond South Chanowah Mountain.

"Somebody's trying to burn the South Chanowah, Jack," he said. "There's a line of fires starting at the Deer Trail and leading up toward Horse Peak—"

"We're on our way," came back from the Chenan; "we got a report from our man on Pigeon Top Hill, a minute before you rang up. He was closer in and on the downwind side, and he said it looked bad. So my boys are already working up the mountain. They have their portable telephone along and plenty of wire. I've instructed them to connect up as soon as

they reach the summit and take further orders from you. You are on the best side for conducting the campaign. Fly at it! I'll meet you on top of South Chanowah after the fire is dead—you're coming?"

"Yes," said Emery; "I'll leave the office to my assistant and breeze right over."

Hardly had he rung up when Ellison called again.

"Another one, Phil! Still higher and to the left—"

Five minutes later, the chief ranger was in his automobile whirling over the new State highway toward the Chanowah. For half an hour his machine flew, snorting impatiently up the long, winding grade under the impending forest trees. Then, suggesting almost a picture sprung suddenly from a melodrama, as the road slid over the top of the Camasilla, before the ranger's eye sprang the great, green trough of the Chanowah, with the fire raging up its farther side.

And now even the most unpracticed eye could have made no mistake. It was indeed a fire. The smoke was no longer a blue haze. It rolled into the sky and floated away across the ranges, a sullen, dun cloud which bore with it the lives of thousands of young trees, lives which it was the business of the forest people to preserve for the future greatness of the land. Like a sinister battle line the fire extended from the Chanowah River in a long diagonal

toward Horse Peak.

Emery shook his head and his face grew anxious.

Watt's Station was a well-built log house standing at the lower end of a long, narrow flat that extended along the Chanowah River for half a mile. A wire fence had been strung about the flat and there was alfalfa growing; for the Government prun-



Two minutes later he was urging his mount along the trail up the flat, ahead of a long procession of service men and the heaving pack train. Far up the river the dun cloud billowed yet higher into the sky

dently foresaw the necessity of having plenty of hay for the rangers' horses during the short seasons.

Just now the station was the scene of remarkable activity. Determined-looking young men rode down from hidden trails and the air was full of the jingling of spurs and the stamping of impatient pack horses. Packs were being roped and fire shovels strapped on. There was an approaching roar and Chief Ranger Emery whirled down the grade and jumped out of his machine. A horse was ready for him. Two minutes later he was urging his mount along the trail up the flat, ahead of a long procession of service men and their heaving pack train. Far up the river the dun cloud billowed yet higher into the sky. A wind whirled down the canyon and the ranger observed it anxiously.

"Rising!" he said. "That's bad."

As the rangers neared the upper end of the flat, a man rode slowly out of the forest and started down to meet them. He sat upon a yellow horse and hunched low in the saddle. Emery's face went grim. "Billy Tobias!" he muttered.

Tobias stopped his horse as the ranger came up. His eyes were black and swollen and his mouth was bruised. There was blood upon his clothes.

"Mr Emery," he whined, "I'm in trouble!"

"That's no news" grinned Emery unfeelingly. "What have you done this time?"

"Nothing. I stopped at the Deer Trail a few hours ago and Johnny Onion knocked me down and stabbed me."

Emery regarded him with more gravity. "Didn't kill you though," he said.

"But it wasn't his fault!" said Tobias. "His knife hit a note book in my breast pocket and glanced off on my ribs. There's a gash a couple of inches long and I've bled a lot. Then he punched me in the face an' ran."

"What had you done to him?" demanded Emery.

"Not a thing. I—Irelocated the Deer Trail—that's all. I had a perfect right to. He wasn't naturalized. He —"

The pack train had reached them and was filing by. The service men passed with barely an indifferent glance at Tobias. Emery turned to follow them.

"How long are you people going to let that foreigner stay there?" asked Tobias. "He's a dangerous man. I'm going to hold you responsible for this—"

Emery wheeled his horse and rode back. "I'll call that bluff!" he said. "Now and for all time!" He shook a strong forefinger under the crook's nose. "I've got a report on you," he said; "I've had it ready for a week. When I get back from this fire I'm going to turn it over to the Department. I've got you—right! You know what'll happen to you when Uncle Sam starts hunting for you! You're through! Understand! You're through!" The big ranger turned without another word and galloped up the trail after the men.

His mean face the color of ashes, Tobias straightened painfully in the saddle and slammed the spur against the ribs of his yellow horse. He knew the signs. The limit of patience had been reached and the forest people were going to get him! He did not even dare pass the Station.

He slid into a side trail and laid a course for the far places. The Chanowah saw him no more.

When within half a mile of the summit of South Chanowah Mountain, the wind did a freakish thing. It died for a few minutes, then whirled back upon itself and started blowing down the mountain. Leck Morgan, hanging upon the lower flank of the conflagration, found himself suddenly in the path of the thing, which seemed to have become a living creature, turning upon him to revenge itself for the baiting he had been giving it. So sudden and unexpected was the attack that the man was in imminent peril. Dismayed, he glanced back across an elk grass glade and prepared to run. In the same instant a man heaved himself out of the very edge of the fire and plunged staggering toward Morgan. His clothing was smoldering; his hair was singed away, and the lashes were scorched from his smoke-blinded eyes. In his hand was a long knife and he jabbered incoherently.

"Crazy as a loon!" muttered Morgan, and hit the man squarely upon the jaw.

An hour later, Jimmie Denver and half a dozen men from the up-river stations, skirting the lower edge of the roaring furnace, met Morgan staggering away from the fire, keeping barely beyond the rush of the flames. The ranger was scorched almost as badly as the man he carried. He still clung to his shovel, though the handle of the implement was charred and burning in several places. He lurched up and delivered his insensible burden to the rescuers.

"It's Johnny Onion," he croaked. "Don't 'phone headquarters—yet. The little man's clean loco!"

And promptly the wind did another freakish thing. It died once more—and held! Armed with fire shovels and axes the Chanowah rangers flung themselves afresh upon the vindictive line of fire below; and down from the summit the men of the Chenan swarmed along its upper edge. The calm continued to hold. By midnight there was nothing left of the great fire, beyond the hundreds of pitch snags flickering torchlike in the thick smoke that rose heavily through the night from the acres of rotten logs, smoldering, safely isolated, inside the burned area.

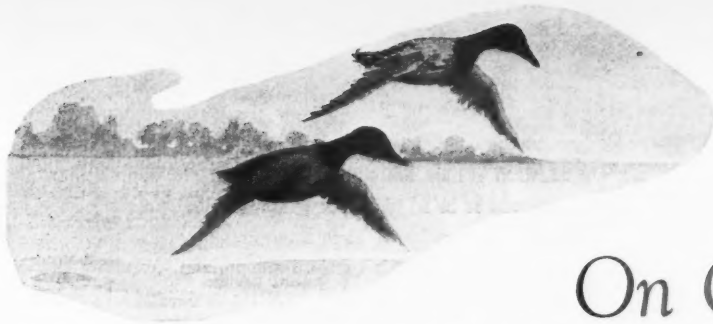
Day was just breaking when Morgan and Denver, assisted by two other Chanowah men, carried Johnny Onion across the threshold of the little house and placed him upon his bed by the window. Morgan lighted the lamp and looked around. There was an upturned chair; a loaf of bread lay upon the floor. On the table a letter and a little pile of gold.

Grimy and singed, too utterly exhausted to make an immediate move toward getting breakfast, the rangers sat and rested while the sun came up and the insolent jays awoke and squalled from the hillsides.

"We'll have to lie a heap, I reckon!" sighed Morgan. "I don't mind lying a little, here and there, just for recreation; but I sure do hate to lie to Uncle Sam!"

"It's in a good cause," said Jimmie Denver weakly. He was very tired. "Uncle Sam would forgive—if he knew." "Carlotta!"

Johnny Onion had started raving. Over and over he told the story of Billy Tobias and the (Continued on page 620)



Keeping Tab On Our Waterfowl

United States and Canada Making Count of Migratory Game Birds



UNTERS who have exulted over the discovery of a stretch of marshland or waterway that abounded in mallards, canvasbacks and droning geese, and who have returned the following season to find their areas barren of game fowls, need not deplore the vanishing of these swift and graceful wild things of the air. They

are, in all probability, just around the cove, or over the hill, or sightseeing in other regions. Next season they may be back on their old feeding grounds, as swift and as canny as ever.

Fluctuation in the abundance of migratory waterfowl in North America has long been a source of concern. But it was not until a year ago that some concerted effort was made to obtain information concerning their distribution and movements and their fluctuation in numbers from year to year. This was on August 20, 1927, when the United States Biological Survey inaugurated a series of waterfowl censuses, to be carried on at important concentration and breeding areas of the birds throughout the greater part of North America.

These censuses are being taken monthly on a designated day by more than three thousand voluntary cooperators of the Department, and at each concentration area counts or estimates of the abundance of ducks, geese, swans, and the American coot, or "mud-hen" made. These observers represent every State in the Union and all the Provinces of Canada, as well as Alaska and Porto Rico. The important elements in obtaining the information are the simultaneous character of the project and the fact that the

work is carried on at salient points over practically all of the North American continent.

Virtually all of the United States Government Bureaus and State Game and Conservation Commissions are cooperating in this work. Canada also is very active. By a mutually advantageous arrangement, the Canadian Park Service is conducting the taking of these censuses in the Dominion.

The methods being employed are strikingly simple and effective. The dates for the censuses are determined far in advance, and the cooperating observers select an area that can be covered by a waterfowl count in a single day, usually the one in their vicinity that is frequented by the largest number of waterfowl, and one that is extensive enough to give a good idea of typical conditions in the locality. Maps of the areas covered by the different observers furnish accurate means of recording exactly and of identifying areas on which the counts are taken.

An actual count of species of all the present waterfowl is made, unless the number is so great as to make such a count impossible, under which circumstances careful estimates are made. In estimating the numbers in a large flock it has been found best to count a certain portion of it, and then, using this as a unit of measure, to estimate the remainder. Blocks of 100 and 1,000 birds have been found to be convenient units, whether the birds are on the wing or resting on the

water. When birds are scattered in mixed flocks of several species over a large area, the proportion of the entire flock made up by each species is carefully estimated, and in this way the relative abundance of all the species is obtained.



How fluctuations in the abundance of migratory waterfowl in North America are recorded by the Biological Survey. The information is obtained through monthly censuses taken by 3,000 volunteer workers. The shaded portion of the map indicates the concentration areas during the month of March, 1928

While it will be necessary to have a second or possibly a third year's observations for computations of increase or decrease of species or of waterfowl as a whole, the accomplishments already indicate that information gained by the censuses will be of inestimable value in the formulation of a sound policy for the conservation and perpetuation of the country's waterfowl resources. Many interesting facts have been brought out by the censuses up to the present time. One of the outstanding findings is that birds that breed in Canada and migrate over the United States withdraw into surprisingly small areas for the winter. These areas lie chiefly along the Atlantic Coast from Long Island south-

ward; along the Gulf Coast; up the lower Mississippi Valley; along the Pacific Coast; with relatively small areas throughout the central and western United States. In addition it has been found that waterfowls, chiefly ducks, that winter in Mexico, are gathered into about six important areas. The censuses have brought out valuable information as to the movements of the bulk of the waterfowl east and west, as well as north and south, particularly during migration periods. The count has also brought out the location of the bulk of the birds during different months, and the monthly fluctuations in their movements.



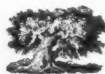
In this Magazine Thirty Years Ago

Quoting from Allan Chamberlain in a paper, "Means Which a Forestry Association Can Employ to Advance Practical Forestry," read at the Boston meeting of The American Forestry Association, and published in October, 1898:

"First of all, I believe it to be the duty of every State association to support the national organization in the truly great work that it is doing for the introduction of the subject all over the country, and especially in relation to its fight for the governmental control of the Federal timber tracts. Had it not been for the persistent energy of The American Forestry Association during the last session of Congress, the country would undoubtedly have lost several of the most valuable Government-owned timber regions in the West. Therefore it seems to me that every member of a State forestry association should become a member of The American Forestry Association."

William R. Lazenby, of the Ohio State University at Columbus, Ohio, at the same meeting, speaking on "The Need of Forestry Experiment Stations," said—

"Although I believe trees should exist for use, I take genuine, hearty pleasure in seeing them grow. I never look upon a fine, wide-spreading, high-reaching, well-developed tree but what I feel like taking off my hat and saying with all oriental courtesy, and more than oriental sincerity, 'May your shadow never grow less.'"



OCTOBER PAGEANTRY

By EDWARD ORMEROD

Swift through the summer woods October came . . .
A lovely wanton . . . if of evil fame:
"Ho, you tall trees—" she cried: "Lend ear to me—
I offer love to buy your fealty . . .
Scarlet and crimson, gold shall be your gain;
Beauty and gorgeousness are in my train . . .
Ho, maples, birches, oaks—attend on me;
My lovers all must wear my livery!"

In gaudy hues she decked each fickle tree—
This wanton wooed the woods delightfully,
And ever at her call new lovers came,
From sober valleys, burning hills aflame . . .
When one and thirty suns had waned she stood
Before the pines and spruce—a dusky wood
That smote her heart like some foreboding gloom
Or whispered warning of impending doom . . .
"Ho, evergreens," she cried: "Bow down to me!"
Then waited, and there passed from tree to tree
A muffled rustling, words ill-understood,
And then a Voice spake, deep within the wood:

"We know thee well, October, faithless jade—
Another year our friends thy dupes are made;
Behold! they seek another mistress now—
Of fairer form, of truer soul than thou . . . !"

At these strange words October turned, to see
Her lovers casting off her livery,
To shiver, gaunt and bare in bleak distress,
To expiate their love in loneliness . . .
The Voice rose harshly, louder breath by breath:
"Who loves thee, wanton, loves thee to his death . . .
Thou offerest us thy beauty? . . . Ends thy day!
Thy time is finished, harlot! Up!—Away!"

Then kinder spake, as one who, strong and wise,
Hath dwelt long years 'neath ever-changing skies:
"Behind the falling leaves the new buds lie,
Waiting their day in nature's alchemy . . .
Waiting the warming kiss of April's breath;
Life resteth for a while . . . there is no death—
Save thine, poor wanton—thou a year art dead!"
October swiftly veiled her face, and fled!

A Hunting Trip of Fifty Years Ago

By CLYDE O'DAY



A FEW years have made a great change in many parts of America. No place is this so strikingly realized as in the far west. At one time good land could be had for the taking and we lived on a homestead so acquired. It was near the Little Humbolt in northern Nevada.

We raised wheat and barley. It was hauled sixty miles to our nearest shipping point, and it required five or more days to make the trip. A train of three wagons hitched together and drawn by fourteen horses or mules driven with a jerk line, constituted the moving power. Each animal was expected to draw one ton in weight. There were no motor trucks in those days.

We had little or no amusements. Only one event during the whole year could be called a diversion from the constant grind. That was our annual hunt. While to us it was a sport, yet it was purely a business matter, the purpose being to lay in a supply of meat for the winter.

Small game was plentiful; cottontail, quail and sage hen. There were many deer and mountain sheep in the Santa Rosa Mountains, but the ruggedness was formidable. For

this reason we went into the rolling or foothill regions, where the western juniper was plentiful. We drove our wagons all the way to our hunting grounds. We did no packing. Generally there were six or eight in the party representing three or four families.

It was a rough country and no roads. Through sage brush, greasewood, willows; across arroyos, creeks and dry washes; over rocks and boulders. Except for an occasional Indian, we would see no one until our return. Each two of the party had a roll of bedding, consisting of two or three old comforters, sometimes a double blanket, and a piece of canvas to roll them up in. The whole was tied with a piece of wire or a small rope. The provisions consisted of flour, baking soda, salt, potatoes, sugar, coffee and smoked bacon or pickled pork. Of course we always had fresh meat, but a piece of bacon fried with it or even added to a mulligan, gave the whole a much desired flavor. One soon tires of wild game as a constant diet.

We never let a tenderfoot go along with us if we could well avoid it. They were not in our class. Our *impedimenta*, as Caesar called his heavy baggage, was a great deal lighter without them, though it wasn't their weight that counted. They were always in the way, worse than the fifth wheel to a wagon. We always took plenty of salt to preserve the meat whether it was jerked or simply salted down. Nothing was ever wasted or left for the wolves or coyotes. Each year's trip was similar to the one before. The one I will relate was during the last week of October and the first three weeks of November, fifty years ago.

For almost a week preparations were under way. We were most particular. A break-down two or three days travel from home, as distance was then measured, was a serious matter. We had two



Fifty years have brought about many changes in Nevada. The yearly hunting trips of the pioneers have vanished with the stagecoach



When good homesteads in northern Nevada could be had for the taking, the hearty homesteaders were more or less dependent upon wild game for meat

muzzle-loading rifles, full stock and long barrels, with a bullet patch box on the side of the stock, hickory ramrod, bullet mould, powder horn, cap box, all complete. They were good guns, too, those old Kentucky rifles. There was a Sharps rifle and several Winchesters, also a single breech-loading rifle, three shot guns and a small caliber breech-loading rifle for small game. We had none of the fancy "fandangle" equipment one sees now in the windows of sporting goods places, no long dirk knives, no patent hatchets, or laced up boots, or leggings. Of course we carried a Jack or Barlow knife of some kind and had regular butcher knives at camp. We didn't need the fancy stuff. I never saw a deer yet I couldn't dress with an ordinary jack knife. If a hunter had appeared at our camp rigged out in the present day garb, we would have thought him a freak, and he would have been. As a necessary addition to the regular grub we had a number of jugs of "cure for snake bites." While we never needed it for that purpose, it was much enjoyed nevertheless. It was only the Indian those days that was prohibited from having a toddy when he was tired, or came in from the cold.

Late in the afternoon we came to a small creek, possibly twenty-five miles from home, and camped. Coffee, bread and cottontail with home cured bacon were devoured. Oh! What a supper we wrecked. There were no fragile utensils. Tin cups, tin plates, iron spoons, knives and forks constituted our eating machinery. Dish washing was a simple art and quickly done. Every fellow was his own dish

washer. Generally a few splashes in the creek and the vigorous application of a piece of gunny sack finished the job. The horses were then hobbled and turned loose to feed.

At daybreak the camp was stirring, and we made about thirty miles before we camped again on a small branch of the Owyhee River. There was considerable deer sign about and after supper we scouted the country in every direction. The indications for game were quite promising. Near the camp a porcupine had mutilated some willow trees. We found Mr. Porky, and knocked him off his limb with a

rock. We didn't want the dogs to run into him during the night.

The next afternoon we came to the junipers proper and made our permanent camp on the banks of a trout stream. We could catch a mess of trout for the outfit in a few minutes. It was a simple process. No rod, no reel, no long line; only a willow and ten feet of line with a hook on it was needed. There were ten or twelve nice fellows in most every pool, and they would take almost any kind of bait.

Signs of the mule deer were everywhere, and after the horses were hobbled, and the bedding unrolled, attention was given to the guns in preparation for the fun. They were rough looking fire-arms on the outside but were shiny where they should be. One of the boys with us was a lad



While the old time hunting trips were chiefly for deer and mountain sheep, the real test of marksmanship was to bring in a string of coyotes

of twelve. It was his first hunt. After we reached the camp he was fidgety. His father told him he could take the little breech-loading rifle, and go up a nearby small ravine. He hadn't been gone long before we heard a shot.

"Guess Buster saw something," his father remarked.

We went on with our work, thinking no more about it. In about ten minutes he shot again, and soon came running into camp. "Well, I've got two up there," he boasted. The boy had killed two deer before we unloaded.

Each day one of us remained at camp as watch, cook and horse wrangler. Sometimes the Piutes, if no one was in camp, would walk off with camp equipment. When a deer was killed it was dressed, hung up and the place marked so a horse could be brought to pack it into camp. If it was not too far from camp we would throw it over

getting them out of streams, quagmires or quicksands were not considered hardships. If half a foot of snow was found on your bed in the morning or a horse had to be located, it was all taken as a matter of course. If a freezing rain soaked one to the skin it was merely considered one of the day's events. Surely we know things by comparison. Hardships then would be considered brutalities now.

There was one incident that I shall never forget. One afternoon my companion and I were hunting up a draw, some distance apart, when I perceived a deer looking in the direction I knew my partner to be. It was across a small canyon, and the deer did not see me. As I pressed on the trigger another deer walked out of the brush and stood between me and the one I was about to shoot. My bullet went through that deer and killed the other also.



It was a wild and rough country, apparently full of deer, but when a hunting party went out to locate them they were hard to find. The junipers were so thick that it was only those keen of sight and quick of hand that got their deer

our shoulders and carry it in ourselves. Every part was used. The hide was made into buckskin; the heart and liver were cooked and eaten. The meat was either jerked or salted down. The scraps were fed to the dogs, which were used to track and run down wounded deer.

Towards the last of our stay snow fell and tracks were crisscrossed thicker than I had ever seen them. The country seemed alive with deer but they were hard to find. The scrubby junipers were so thick that it was only those keen of sight and quick of shot that got their deer.

We killed and packed twenty-eight deer and then prepared for the return. Everybody was satisfied, and did their part willingly and cheerfully. They had had a good time. The four families had plenty of meat for winter. It was apportioned among them equally, each taking his part regardless of who killed it. Boosting wagons over rough places,

Big game is now scarce in that country. The Indians, after they secured guns, killed deer for their hides and often just for the pleasure of killing. In this respect they were like our present day game hog, except that they didn't boast about it. Like the game he so ruthlessly slaughtered, the Indian now is little more than a memory. There are only a few Piutes left.

There is no place in the world today, with the possible exception of Africa, where game is as plentiful as it was in our own western country fifty years ago. What will the next fifty years bring? The world is now relatively so small and all trampled under foot that there is no place to go. Somebody has been in every little corner and nook before you get there. Oh, well! If you haven't lived when such was not the case, you'll never know what great times we "old-timers" really had.

FOREST PEOPLE



Barbara Bayne—Tree Historian

By ERLE KAUFFMAN

BARBARA BAYNE is a historian, first, last, and always. Early in her newspaper career she possessed the genius of making the past live again, the ability to bring to life characters and facts that have long been buried in the ashes of time. Human interest was her forte; and her prey were shreds and fragments of forgotten drama, romance and adventure. Nothing escaped her historical vision; she laid bare glory and tragedy alike, haunting the ghosts of those who in the ages played with the destinies of life and country. She penetrated the web of age and brought back documents so human and lifelike that centuries were removed in her writings and characterizations.

Only one quality was necessary to attract the interest of Barbara Bayne—life. Her subject must first have existed in the mind of someone who gave as well as received from life; must have been a fascinating and significant part of life during its reign; must have left a mark for future life and other generations, a record brimming over with humanness.

It is quite natural, then, that with such a vision the historian should center her genius on one of the most intriguing, the most dramatic, phases of life—the tree.

Tree history, or the sparkling drama associated with trees or forests, early attracted Barbara Bayne. She found

that in almost every instance a tree or forest was linked with historical events and famous characters. The world-renowned stories of Napoleon's willows, Washington's elm and the Forest of the Argonne set her to her task of uncovering the tree history of America. So, over a short course of years, and responding to a personality that knows no weariness, Barbara Bayne, historian, became Barbara Bayne, tree historian.

Last year she settled at Inglewood, California, to compile her treasured history. In less than another year several volumes will have been completed, recording accurately and graphically the true stories of America's outstanding trees. So gigantic is her work, so great is her contribution to the tree-loving people of America, that The American Forestry Association has extended to her the right to title her volumes "The Hall of Fame for Trees," which was created by the Association for the purpose of compiling and registering the famous and historic trees of the nation. In recognition of her undertaking, the American Forestry Association, on July 18, 1928, conferred upon her a complimentary membership as Tree Historian of America.

Barbara Bayne's interest in trees extends, however, beyond her volumes. Some time this month she will present to President Coolidge, the Governors of every state in the



Barbara Bayne

Union, and its territories and possessions, thirteen horse-chestnuts each from the famous Friendship Tree, near Bath, Pennsylvania, for the purpose of establishing "Washington Friendship Groves" throughout the country and perpetuating the story of the friendship between two great leaders who fought for American liberty, and of which the tree is emblematic. Canada, Mexico, and Cuba will also receive thirteen horse-chestnuts, and every State university will receive three to be planted on its campus.

The history of the Friendship Tree at Bath is typical of the material Barbara Bayne gives in her volumes on historic trees.

"George Washington and General Robert Brown became very intimate during the days of the Revolutionary War," Miss Bayne points out, "and their friendship continued after peace and liberty had come to the war-torn colonies. In the course of one of General Brown's visits to Mount Vernon, the first President, with his own hands, dug from his garden two young horse-chestnut trees and presented them to his friend. The tender young saplings were carried on horseback over the mountains and into the hills of Pennsylvania, where they were planted at the home of General Brown, near Bath. Only one of the trees survived, and until 1921, when badly damaged by a storm, it stood in full vigor with an eighty-five-foot spread."

"But this is but a small part of the history of the Friendship tree. It has been authentically established that the horse-chestnut trees at Mount Vernon, from which the

Bath trees were taken, were presented to George Washington by no other than Colonel Henry "Light Horse Harry" Lee, illustrious soldier of the Continental Army, and father of the immortal Robert E. Lee, Commander of the Confederate Army in the war of secession.

"Although only nineteen years old when the war of independence broke out, the daring Virginian offered his services to General Washington and was given command of a cavalry troop. He soon captured the admiration and respect of his commander, who referred to him as the most daring and efficient young officer in the Continental Army, and was given the rank of colonel and a separate legionary corps placed under his command. His most daring exploit was the capture, without loss of life to his own troops, of a large enemy garrison at Paulus Hook, opposite New York city.

"At the close of the war he served as Governor of Virginia, and a very close



The great horse-chestnut at Bath—A monument to the friendship existing between George Washington and General Robert Brown in Revolutionary days, and now known as the "Friendship Tree"

friendship linked him with the first President, whose early confidence in him was never shaken. Like Washington, Colonel Lee enjoyed the fellowship of trees, and the presentation to his Commander-in-Chief of the horse-chestnut trees at Mount Vernon was a result of this mutual love of nature and the respect of one man for another."

In 1929 Barbara Bayne will plant a Mother's Tree, a white birch, in California, using the spade of the American Forestry Association that was used in planting the initial Mother's Tree by Antietam Lake at Reading, Pennsylvania, and also the tree on the White House grounds in memory of the mothers of the Presidents.

The Cleansing Fire

(Continued from page 612)

awakening. Wild, broken, at times incoherent, the story nevertheless welded itself finally into an intelligible whole. One of the men came in, bringing the notice which he had found tacked upon the barn door. Jimmie Denver read the pathetic letter lying beside the little heap of gold. The Chanowah men now understood fully. They recalled, also, the meeting with Billy Tobias on the flat at Watt's Station. And still Johnny Onion continued to rave about Billy Tobias, breaking the story here and there to speak of Carlotta—always Carlotta. And little children playing in the sun.

"They shall be American!" he would scream. "And true men! Not liars, like Billy Tobias!"

Along about noon one of the rangers went up the river and came back with old 'Biah Tibbs. 'Biah had been a scout and Indian fighter in the old days. Now he was a piece of human flotsam, washed back into the hills and lodged there by the whirling tides of life which had become too strong for him. The rangers chipped pieces from their modest salaries and installed old 'Biah as nurse, with plentiful chewing tobacco and unlimited beans.

"Can you manage him alone, 'Biah?" asked Morgan, as the rangers prepared to leave. The old man cut off a generous chew of tobacco and clamped it between his toothless gums.

"Who, me?" he grinned. "Why, I managed four of 'em at a time once, back on the Gunnison River. Four of 'em ravin' along like coyotes singin' at the moon—and me with a feather stickin' in my shoulder blade!"

"Carlotta!" wailed Johnny Onion. Old 'Biah arose spryly and got busily on the job.

* * * * *

Johnny Onion suddenly realized that he lay on his own bed. The American flag hung in its old place above the pillow, close to his face. For many minutes he lay very still and tried to remember. Then gradually the cheerful outside noises straightened his inchoate thoughts and the world whirling around and around. There was a splash of sunlight along the wall. A fire burned in the stove, evidently, for Johnny could hear the tea-kettle singing softly to itself. Out back of the house, old Biah Tibbs was nodding over his pipe.

There came sound of horses at the yard gate and low-voiced conversation. Feet came up the walk and Johnny heard whispering outside his door. Then Leck Morgan and Jimmie Denver came tip-toeing in. As he saw the light of reason in the sick boy's great black hollow eyes, Morgan smiled broadly. "Why, hello, Johnny! he said gently. "You're here again, aren't you?"

Johnny Onion's eyes set in a look of dread. "Was it—a dream?" he whispered. Morgan's face went grave.

"No, Johnny," he said slowly; "it wasn't a dream, it was an accident."

Johnny Onion lay quiet, his eyes, dim with the fever of weeks, begging enlightenment. "I—I struck him," he said

feebly, "with my knife. He had betrayed me, and so I struck him. I forgot that this was America, and I struck to kill my enemy. Then I ran. I fell and hurt my head. Then I did not remember again; but I have had a dream—What did I do?"

"You got out every ranger and fire guard within twenty miles," grinned Morgan, "and made them earn a month's salary in twenty-four hours!"

Johnny lay quiet for a time. "Does Uncle Sam know?" he asked them.

"Only what is best for him," said Denver soothingly. "We, who are working for Uncle Sam, have tried to do the right thing. We have run Billy Tobias out of the Chanowah and torn down the notice from your barn door. We have told Uncle Sam that your farm is not mining ground, but agricultural—and that you have proved it by five year's hard work. When you are strong enough to travel, you can go and become naturalized. Then Uncle Sam will give you your home forever. And while you are getting well the men of the Chanowah Reserve will see that you are not troubled." He half turned toward the door. "Come!" he called softly in Italian.

Whereupon before Johnny Onion's unbelieving eyes occurred a miracle. In the doorway appeared a little brown girl, attired in the quaint garb of the Italian peasantry. For a moment she stood timidly; then she flew across the room and gathered the Italian boy's scorched black head into her arms, weeping and pouring forth a flood of endearments.

Presently she calmed and began talking in the soft patois of the south, telling him how the good Americans had found upon his table the letter and the gold that was to pay her passage across the sea. How they had sent these things to her, urging her to come quickly. At the end of the stage line, Chief Ranger Emery had met her himself. And here she was, and dear God, what a wonderful home! Johnny Onion awoke at last to the realization that it was indeed no dream. The slow tears rolled down his wasted cheeks; one trembling hand went painfully up and carried a fold of the American flag to his lips.

"One life!" he quavered, "it is such a little thing! But I give it all to the good Uncle Sam—" Feebly he turned his head and buried his face in his wife's faithful bosom, sobbing weakly. Morgan got up abruptly. "Here I'm having a good time," he said huskily, "and I ought to have been out cutting brush on the river trail, two hours ago!"

And so the rangers went away and Johnny Onion was left alone with his little wife and a great peace. Old 'Biah Tibbs came in and began pottering around the stove, but the two never saw him. Presently Carlotta, still holding the scorched head upon her breast, began crooning softly a lullaby, old as the soul of Vesuvius, which threw its grim shadow across the place where they were born.

Justice, kindness—home! Johnny Onion had at last found a land which gave him all these things.

Hunting the Forest Outlaw

(Continued from page 582)

on ice-laden ponds. The parents wanted to be assured that the real killer had been destroyed. True, an aged female had been killed thirty-five miles away, but there was not a particle of proof that it was the guilty one.

Five weeks from the day the lad was killed, Charles Garrett, a rancher, came out of the hills with a dead cougar in his sleigh. He was taking it to the county seat to claim the bounty. Word of the capture reached the headquarters of the government hunters. Petersen was out in the hills. Englund and several other hunters drove thirty miles to examine the kill, which proved to be a young male cougar two years old and weighing nearly a hundred pounds.

"Big enough to kill either man or boy," Englund remarked, as he felt of the long tusks and curving claws, needle sharp.

Inquiry proved that the county authorities did not consider the animal large enough or dangerous enough to have killed the boy, so an examination of its stomach was held unnecessary. Englund, however, strongly advised an examination; not so much in the belief that it was the guilty animal, but more to find out what it was feeding on.

When Petersen returned he was informed that the animal had blundered into a trap set for coyotes at the edge of an orchard and had been reported to have been hunting pheasants.

"That alone is sufficient to convict him," he said, showing considerable interest. In an open lair above where the boy was found, I saw a quantity of pheasant feathers scattered about. That is a very unusual thing for a cougar to do. They are generally back in the hills feeding on deer and snow-shoe rabbits."

This increased the necessity of an examination, and despite the strong revulsion of feeling that had set in against the big tawny cats, the examination was made. While the work

was going on Petersen requested meat for his hungry hounds. Cougar steak had always been quite a delicacy, so some generous slices were cut and tossed to them. Their flashing jaws caught the meat, but as quickly dropped it.

"Now what's the matter?" said the veteran hunter, eyeing the hounds questioningly. Although he impatiently jerked them up to the flesh, they would have none of it. Then Petersen brought meat from the market which they ate readily.

"There's just one reason for their refusing it," he explained, and related the incident at the railway trestle. "That's the guilty animal."

It surely looked that way when those examining the animal cut into the stomach and were greeted with horse-hair and a terrible stench. A wider incision was made and revealed a tight mass of long, light-colored hair—human hair.

The rest is news already told. The Smithsonian Institution, Biological Survey and University of California agreed that the Garrett cougar was the one that killed the boy. A deal of controversy followed, as the findings upset some long-believed theories concerning the retaining of hair in the stomachs of snow-traveling carnivora. It bids fair to open a new chapter in natural history, as a well-known mammalogist indicated when he sought permission to use the data gathered in a new book on fur-bearing mammals of North America. The animal was mounted life size, and is on display at the State Historical Society Building at Tacoma, Washington.



THE WILD GOOSE

By Janet Gargan

The northern land of stream and lake
Where antlered creatures came to slake
Their thirst—of dimlit forest aisle,
Of plain that outstretched mile on mile,
Had been their home—now, summer past,
The wild goose and his mate, at last,
Would leave this haunt of solitude
O'er which the storm-cloud soon would brood.

The hunter with his swift, sure death,
That stilled the palpitating breath
Of furred and feathered creatures, here
Had not intruded—and no fear
Assailed the wild goose and his mate
Watching their brood, but time and fate
Had scattered all their young—and they
Would southward fly ere dawn of day.

And thus they joined the honking flight
Of swiftly graceful flocks—the sight
Of these across the autumn sky,
The vibrant challenge of their cry,
Gave thought that soon came winter's cold,
With ice-bound lakes, with snow-pall's fold
Upon the summer's wealth of bloom,
Of days too short, and night's long gloom.

The wild goose and his mate flew low
When a desert pool stretched dark below—
A bullet screamed—his mate's white breast
Crimsoned—close to her side he pressed,
For wild geese ne'er desert the mate!
Another bullet, swift and straight—
Night—and the pool held, so it seemed,
Two tropic blooms that whitely gleamed.

The Temperamental Walnut

By J. WILBUR O'BYRNE

WHEN Genius, always granted privileges, feels the need of greater latitude and indulges itself intolerantly at the expense of associates, we charitably forgive it in the name of "artistic temperament." And, like charity, temperament covers a multitude of sins, whether it be in the world of trees or the world of men.

For several years the writer has been interested in an apparent incompatibility of the black walnut and certain other plants. It is hard to believe that so fine a tree as the walnut should be disliked by its neighbors, but perhaps it is one of those suffering from an overdose of temperament. Certainly the tree is in a class by itself among our native species, and just as certainly do various plants show a marked inability to thrive in its immediate vicinity.

About five years ago a Virginia farmer, while inspecting a piece of ground he was having cleared up for pasture, noticed that the old negro who was doing the work was leaving all walnut trees. The explanation was that wherever there are walnut trees, sprouting of undergrowth is less vigorous and the sprouts are easier to kill out. To prove his point the old man pointed out several instances that appeared to substantiate his claim.

Two years later Mr. R. P. Cock, Superintendent of the York County branch of the Virginia Agricultural Experiment Station, called attention to the fact that Loblolly pine (*Pinus taeda*) appeared to be unhealthy in the vicinity of walnut trees. The areas to which he called attention—more or less regular, concentric circles with a walnut tree as the center of each—were distributed throughout a typical "old field" stand of loblolly. At a distance of possibly one hundred feet from the walnut it was noted that the foliage

on certain branches of the pines was turning yellow. Within the areas the effect became more pronounced until immediately surrounding the tree and covering an area slightly larger than the spread of the branches, the pines had been dead so long that their remnants had practically disappeared. The area over which the unfavorable conditions existed seemed to be increasing with the growth of the walnut tree.

Subsequent observations seemed to bear out the theory that there was a definite antagonism between walnut trees and certain other native plants. Blackberry bushes were one of these, whereas raspberries appeared to thrive; many species of common weeds never occurred under a walnut,

whereas blue grass seemed to grow more vigorously under the crown than in the open. A few experiments conducted at the Virginia State Forest Nursery to determine whether the injury could be attributed to the presence of leaf litter or hulls, gave negative results.

At about this time, January, 1925, A. B. Massey, of the Virginia Agricultural Experiment Station, read a paper before the Virginia branch



Courtesy Virginia Polytechnic Institute

The walnut exhibits marked intolerance not only toward apple and other fruit trees, but extends its antagonism to grasses as well. In this alfalfa field the crop in the vicinity of the large walnuts has been entirely killed

of the Academy of Science on "Antagonism of the Walnuts (*Juglans Nigra* L. as *J. Cinerea* L.) in Certain Plant Associations," in which he cited literature and reported some very interesting experiments, with which he demonstrated. To quote his summary:

"1. Walnut (*Juglans nigra* and *Juglans cinerea*) has an antagonistic action which causes a wilting and dying of certain plants such as alfalfa, tomato, and potato.

"2. Roots of the affected plants were always in close contact with walnut roots; the toxic substance is not generally distributed in the soil around walnut trees, but is

localized particularly in the vicinity of the walnut roots.

"3. Walnut root bark contains a substance which is toxic to the roots of tomato plants grown in water culture.



One of two walnut trees in an opening in an "old field" stand of loblolly. Here the walnuts are about 150 feet apart, and although in between are a few scattered pines, they are respectfully keeping their distance from their temperamental neighbor

"4. It is likely that juglone, or some similar substance, is the toxic constituent of the walnut."

In his review of Massey's article, appearing in the March, 1926, issue of the *Journal of Forestry*, "H. S." comments: "The antagonism of walnuts in certain plant associations should be of interest to foresters dealing with those trees in mixed stands. It is not at all improbable that similar

reactions exist in natural stands in which walnuts occur." With walnut, one of our most valuable trees, I believe it would be well worth while to give this matter further study.

Mr. Massey is continuing his investigations to determine, if possible, what plants or groups of plants manifest this aversion. Either he or the writer would be glad to hear

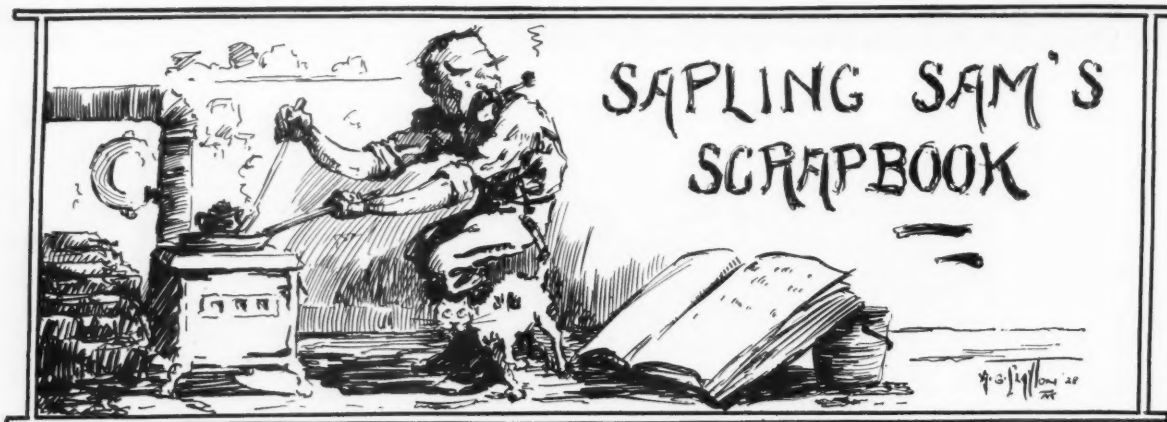


This young black walnut is growing up in the midst of a young stand of loblolly pine, which is growing densely and uniformly over the rest of the area. Note the absence of the pine growth immediately surrounding the larger walnut trees

from others who may have made actual observations along similar lines. If the observations are backed up by photographs, so much the better.

—WHAT IS A FORESTER?—

"A forester then is not, as the American public has been prone to apply the word, one who knows the names of trees and flowers, a botanist; nor even one who knows their life history, a dendrologist; nor one who, for the love of trees, proclaims the need of preserving them, a propagandist; nor one who makes a business of planting parks or orchards, an arboriculturist, fruit grower, landscape gardener, or nurseryman; nor one who cuts down trees and converts them into lumber, a wood chopper or a lumberman; nor one set to prevent forest fires or depredations in woodlands, a forest guard; nor even one who knows how to produce and reproduce wood crops, a silviculturist; but in the fullest sense of the term, a forester is a technically educated man who, with the knowledge of the forest trees and their life history and of all that pertains to their growth and production, combines further knowledge which enables him to manage a forest property so as to produce certain conditions resulting in the highest obtainable revenue from the soil by wood crops."—B. E. Fernow, in "Economics of Forestry."



A True Fisherman

The *Western Christian Advocate* gives us this: "Doin' any good?" asked Jim Gilgore, looking over the rail of the bridge.

"Any good?" answered the fisherman below. "Why, I caught forty bass out o' here yesterday." "Say, do you know who I am?" asked the man on the bridge.

The fisherman replied that he did not.

"Well, I'm the fish and game warden."

"Say," asked the fisherman, "do you know who I am?"

"No," replied the officer.

"Well, I'm the biggest liar in the country."

All Kinds of Poultry

Had a hard time reading this sign near Frederic, Michigan, but here's what it said: "Hens and broilers, also fox hound puppies."

Wanderlust

I do not know, I do not care
How far it is to anywhere.
I only know that where I'm not
Is always an alluring spot.

Bay City Times.

Superficially, I'm Sure

The feet of a bee, according to a certain scientist, are its organs of communication. Speaking from experience this observation seems to have little point. Now if he were speaking of a mule,—one certain mule I know,—but then, one can't speak of that mule in polite society.



Too Far From Timber

The following, according to the *Florida Times-Union*, was found pinned on the door of a deserted shanty in North Dakota: "Fore miles from a nabor, twenty-five miles from a post offis, twenty-five miles from a r. r., 180 miles from timber. Have a mile from water. God bless our home. Were going East to get a fresh start."

Fresh Laid

Fie upon me. A publication called "*The New Yorker*" gleaned this contribution to science before

What You Will

In summertime
You want no food
That makes you chew,
Nor any clothes
To stick to you;
You want no jokes
To make you holler,
Nor drinks that are—
Well—hard to swaller
In summertime.

In summertime
You want no sights
That make you blink,
Nor books profound
That make you think;
You want no fat—
Just bones and skin,
And lots of ice
To waller in
In summertime.

In summertime
It's very hot
And what you want
You get it—not!
In summertime.

—*Kansas Industrialist.*

I discovered it. Same being a copy of a letter:

Mr. J. H. H.—

Assistant District Forester,
United States Forest Service,
Denver, Colorado.

DEAR MR. H—

At the request of the Washington Office of the Forest Service, there was shipped recently to Mr. J— H—, United States Game Warden, c/o Omaha Merchant Express and Transfer Company, Omaha, Nebraska, the Forestry exhibit entitled "Five Rules for Campers," for display at the Izaak Walton League Sportsman's Show, April 18 to 21, 1928.

When the exhibit was being renovated for shipment it was found that a wax fried egg belonging in the frying pan for the camp fire had been damaged by previous exhibitions, and had to be replaced. The new model egg was not completed in time to be sent with the exhibit, which left our warehouse at Alexandria, Virginia, March 22. We now have the model of the fried egg, and have been informed by the Forester's office that you are to be at the exhibition and that if it is sent to you, you will attend to mounting it in the frying pan. The egg has been carefully packed for shipment and is just a small parcel post package. It will be appreciated if you will advise by mail immediately an address to which the package may be sent to insure its reaching you.

There is in the package with the egg a tube of transparent cement for use in attaching the egg to the frying pan. To cement the egg onto the frying pan remove screw top of cement tube, squeeze out enough cement to cover generously the bottom of the egg; place egg in bottom of frying pan and press gently so that the under surface of the egg makes good contact with the pan. Allow egg and pan to remain undisturbed for about two or three hours at which time the cement will be sufficiently hard to permit handling. Care should be taken to have the frying pan clean before the egg is cemented on.

Sincerely,

JOSEPH H—,

Chief, Office of Exhibits. Department of Agriculture.



"A Forward Step in Forestry"

ONE of the most encouraging signs of recent times in respect to timber conservation and reforestation in the United States has been the activity of big lumber-producing companies in the study of forest problems and the adoption of measures of conservation in connection with their own business. Conspicuous in this movement have been the American Paper & Pulp Association and the National Lumber Manufacturers Association. The latter organization has just begun a new work which will surely be of great value. It is sending its industrial forester, Franklin W. Reed, on a tour of the pine regions of the South, where he will make an extensive industrial forestry survey.

Starting with the territory of the Southern Pine Association, the North Carolina Pine Association and the Hardwood Manufacturers' Institute, Mr. Reed will visit in turn the forest areas in which the different associations operate. He will pay but little attention to the northeastern States, because information about the woods of their territories has been gathered and will be furnished by the American Paper & Pulp Association.

It is highly significant that the National Lumber Manufacturers Association should make the proposed investigation, for it comes as a supplement to an extensive trade expansion campaign of the association designed to promote the consumption of forest products. It shows that the association plans definitely to promote efficiently and on a large scale the encouragement of the reproduction and perpetuation of the sources of forest materials. Mr. Reed's survey will enable the Manufacturers Association to make specific statements rather than theoretical generalizations regarding industrial reforestation. He will particularly compile information about large forest properties whose owners are trying to grow and conserve timber, and will combine this with an account of how each of them is achieving his purpose.

With the aid of this survey, it is expected that definite and trustworthy conclusions may be drawn as to how far industrial forestry can be relied on to keep privately owned forest areas productive and to assure to lumber industries a dependable supply of raw material. It is hoped also to show the extent to which public forest ownership, Federal, State and municipal, must be expanded in order to insure continued productivity of such forest lands as private capital cannot afford to handle.—*Christian Science Monitor*, August 29, 1928.



"GROWING MORE LUMBER THAN EVER"

The coastal regions of Virginia, North and South Carolina, producers of forest products of over three hundred years, are regions of perpetual forests, says Mr. Reed in one of his early reports.

"Eastern North Carolina is growing more timber today than ever," lumbermen tell him. Lumber companies that do not operate conservatively and with a view to forest perpetuation are the exceptions in the coastal plain country, reports Mr. Reed.

Through its trade extension campaign the National Lumber Manufacturers Association is building the new markets for forest products that make new forests economically possible.

Through its encouragement of forestry, the National Lumber Manufacturers Association is fostering a prompt response of forest reproduction to the demand for forest goods.

National Lumber Manufacturers Association

702 Transportation Building, Washington, D. C.

"American Standard Lumber from America's Best Mills"



Senate Committee Investigates Creation of International Park

The possibility of the creation of a great international park comprising 14,500 square miles in northern Minnesota and in the Province of Ontario, Canada, is being investigated by a subcommittee of the Senate Committee on Agriculture and Forestry, which met at Minneapolis on August 21. This project is embodied in a bill (S. 3913) introduced during the last session of Congress by Senator Shipstead, of Minnesota, who is chairman of the subcommittee. The bill contemplates Federal legislation to protect the natural beauties and resources of the American portion of the proposed park, pending an international agreement for development of the entire project. The territory involved is covered by the Rainy Lake watershed.

Rachford Succeeds Will Barnes

C. E. Rachford, Assistant Chief of the branch of Range Management of the United States Forest Service since 1924, has been named Chief of that branch to succeed Will C. Barnes, who retired July 1. Mr. Rachford has been connected with the Forest Service since 1905, entering the service as a guard on the Modoc National Forest, in California. He served as supervisor of the Modoc and Santa Barbara National Forests, and from 1915 to 1920 was assistant district forester in charge of the regulation of grazing on the National Forests of California. During the years 1920 to 1924, Mr. Rachford performed the enormous task of appraising all of the grazing lands on the National Forests of the country, his appraisal becoming the basis of grazing fees now in force.

Committee on Wild Life Legislation Formed

The American Forestry Association is one of the organizations which will be represented on the National Committee on Wild Life Legislation, formed at Seattle, Washington, early in September at the convention of the Game and Conservation Commissioners of the United States. Five other organizations are included.

The National Committee was formed because of the urgent need, it was stated, for the establishment and maintenance of a number of inviolate sanctuaries for the protection of migratory wild fowl and shore birds. A resolution was adopted endorsing in principle the provisions of the Norbeck bill as approved by the United States Senate in May, 1928. The committee will meet in Washington in October.

T. Gilbert Pearson, of the National Association of Audubon societies, was named chairman of the committee, and Seth Gordon, of the Izaak Walton League, secretary. Besides The American Forestry Association, the other organizations represented on the committee are the International Association of Game, Fish and Conservation Commissioners, the Western Association of State Game Commissioners, the American Game Protection Association, the Izaak Walton League of America, and the National Association of Audubon Societies.

West Coast Lumbermen Support Forest Taxation Study

The Forestry Committee of the West Coast Lumbermen's Association has endorsed the study of forest taxation in the Pacific Northwest recently launched by the United States Forest Service under the direction of Dr.

F. R. Fairchild, it has been announced. George S. Long, general manager of the Weyerhaeuser Timber Company, Tacoma, Washington, is chairman of the committee.

This inquiry into forest taxation is being conducted under the provisions of the Clarke-McNary law, in cooperation with the forestry departments of Oregon and Washington and with local organizations having special interest in the subject. In endorsing the tax study the Association's committee recommended the cooperation of operators and owners of timberland and cut-over land in furnishing the information required to the Forest Service.

Illinois Proposes Bond Issue

Illinois voters will consider a twenty-million-dollar bond issue on November 6 to make possible the purchase of forest, fish, and game preserves in various parts of the State. This has been endorsed by the Illinois Conservation and Flood Control Association. It is planned so that the investment may be cared for by fees from hunting and fishing licenses.

Pacific Coast Suffers from Fire

Dangerous fire conditions have struck almost the entire Pacific Coast so far this season, according to the Western Forestry and Conservation Association. Losses have not been high so far, because of thorough organization, but the situation is critical. Effort is being made to make loggers, recreationists and settlers observe every precaution.

Washington forests, State, government and private, have had 765 fires so far this season, 186 ascribed to lightning, 174 to smokers.

eighty-four to campers, sixty to brush burners, fifty-six to railroads, fifty-three incendiary, thirty-nine to lumbering and thirty-five to berry pickers. Merchantable timber damaged is estimated at 2,426 acres and 398,000 feet, B. M.

Oregon reports 900 fires with merchantable timber damage to 7,300 acres but actual loss only one and one-half million feet. Reforestation areas comprising 44,000 acres have been damaged and 10,000 acres of brush and grass land burned over. Conditions are extremely critical in eastern and southern Oregon, with much incendiarism prevalent.

Idaho reports 875 fires for the season, about 600 being in National Forests, mostly in old burns. Lightning set 320 of these fires. Merchantable timber loss is placed at 278 acres, with one million feet lost. Montana has had comparatively little damage, although conditions are dangerous.

California, outside federal lands, has had 937 fires, representing 252,384 acres burned and \$920,000 damage, of which only 1,050 acres and \$693 is merchantable timber. The majority is brush, pasture and grain land. Forest reproduction and potential forest land represents about 7,000 acres and \$1,815,000 damage.

The National Forests of California report 790 fires so far for the season, with damage to 154,000 acres within their boundaries, but only 33,000 acres of Government land damaged and the merchantable timber loss only 5,000 acres. Chief damage has been to brush and woodland.

Named District Forester

Walter A. Peterson, of Clarkton, North Carolina, who has been engaged for the past several weeks in a study of forest resources in the third forestry district, has been appointed district forester for that territory with headquarters in Fayetteville. Mr. Peterson succeeds Charles H. Flory, Assistant Forester in charge of fire control, who held the post for more than a year.

Michigan-California Company Works for Sustained Yield

The Michigan-California Lumber Company, which owns 78,000 acres of timber land on the Georgetown Divide in El Dorado County, California, has for several years been studying how to put this land on a sustained yield or crop basis.

"We now believe that the company will be able, at the present rate of cutting, which is between 30,000,000 and 40,000,000 board feet a year, to produce a steady supply of lumber for all time to come," James Danaher, Jr., general manager of the company, recently reported.

"It is a question of applying arithmetic to the results of the studies. As time goes on we may have to make some changes," he continued. "We wish to be on a crop basis, and according to the best calculations that can be made, we are already there."

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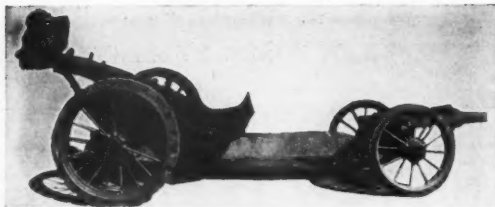
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Dedicate New York Ranger School

The first general conference on Ranger School education was held on August 25 at the dedication of the New York State Ranger School Building at Wanakena, New York. The dedication of the new building preceded the conference.

The Ranger School is unique in respect to its great growth since 1913, when it was established, and also because it is the only institution of its kind in the country. It is a branch of the New York State College of Forestry at Syracuse University, and is under the supervision of Dean Franklin Moon.

The course given at the Ranger School is intended to train men to fill the gap between the professional forester and the lumberjack. It is an intensive course with surveying as a foundation and includes tree nursery work, cruising, and forest management, as it relates to the handling of woodlots. The course starts in March and continues through to December, which affords the student an opportunity to examine forestry conditions in all seasons. Nearly seventy per cent of the students are employed in the occupation for which they were trained at the Ranger School.

Dean Henry S. Graves, of the Yale Forest School, was one of the principal speakers, and he said, in part: "The problem of forest education extends beyond the professional school. The future of forestry is dependent not only on the ability, vision, and sound judgment of the professional foresters but also on the intelligence and skill of the men down the line—the superintendents and foremen of local forest activities and the workers in the woods and at the mill. The key to successful work in forest

protection, silviculture, or utilization is often-times the interest, enthusiasm and ability of the local field officers, the ranger, the woods foreman or logging boss. The training of these men for their special work in the forestry undertaking is as important as that of the professional forester."

Other speakers were Senator W. P. Love, Brooklyn; Professor John M. Briscoe, University of Maine; Professor R. S. Hosmer, Cornell University; Professor Robert Craig, Jr., University of Michigan; Dr. E. A. Ziegler, Mont Alto, Pennsylvania; Dr. J. S. Boyce, Northeastern Forest Experiment Station, Amherst; R. D. Forbes, Allegheny Forest Experiment Station; Roy Headley and E. N. Munns, Forest Service, Washington, D. C.

Entomologists Meet at Cornell

Declaring that the world is still in the Age of Insects and that the Age of Man is not yet established, Dr. L. O. Howard, of the United States' Bureau of Entomology, opened the Fourth International Congress of Entomology, at Cornell University, by pointing out that the prevalent conception of an Age of Man finding its supremacy threatened by a looming Age of Insects is not accurate.

The President of the Congress declared that we must look upon the insect world as the old established order, and animal hierarchy of such excellently ancient lineage that it can count even the dinosaurs as a race of upstarts that had their day and ceased to be. It is the race of man, he declared, who must be looked upon as the invaders, as the attackers, as those who seek a place in the sun at the expense of the insects, the present landlords.

Dr. Erich Martini, of Germany, stated that the weather man should be called into an alliance now existing between the entomologist and the medical scientist. This is necessary, he said, because of the need for a better understanding of climatic factors as they affect insect-borne diseases.

Clarke-McNary Fire Protection

Now that Indiana and South Carolina have entered into cooperation with the Federal Government in protecting their forest lands from fire, thirty-eight States in all are thus cooperating under the provisions of the Clarke-McNary law. Of the thirty-nine States whose timberlands make them eligible to do so, the only one that has not yet joined in this cooperative work for forest protection is Arkansas. In Arkansas, although the State itself is not active in forest protection, it is reported that private owners of forest land are spending \$75,000 a year in protecting lands aggregating about 4,000,000 acres. This private work, and the work of the Forest Service on the two National Forests in Arkansas, give fire protection to about one-half the pinelands in the State.

Season for Hunting Woodcock Changed by Federal Regulations

Changes in the regulations under the migratory-bird treaty act have been announced by the United States Biological Survey. The changes affect waterfowl locally in Massachusetts, doves in Georgia and Louisiana, and woodcock throughout the country.

The new amendments establish the period October 1 to January 15 for hunting migratory waterfowl in Barnstable County, Massachusetts, south and east of the Cape Cod Canal, thus conforming with the open season in Dukes and Nantucket counties. The open season on mourning doves in Georgia is made from October 16 to January 31, conforming with the State season; and a split season on mourning doves is established in Louisiana from September 1 to September 30 and from November 20 to January 31.

A general readjustment of the open season on woodcock has been made, with a reduction in the hunting period to one month. The periods during which woodcock may be hunted during the approaching open season are as follows:

In Maine, Vermont and North Dakota, from October 1 to October 31; in New Hampshire, Massachusetts, Rhode Island and Connecticut, from October 20 to November 19; in New York, New Jersey, Pennsylvania, Ohio, Indiana, Michigan, Wisconsin and Iowa, from October 15 to November 14; in Maryland, the District of Columbia and Missouri, from November 10 to December 10; in Delaware, Virginia, West Virginia, Kentucky, Arkansas and Oklahoma, from November 15 to December 15; and in North Carolina, South Carolina, Georgia, Alabama, Mississippi and Louisiana, from December 1 to December 31.

New Hampshire Conference

Featured by constructive and inspirational addresses and papers, the Sixteenth Annual Forestry Conference of the Society for Protection of New Hampshire Forests, was held at Keene, New Hampshire, September 5 to 7.

Major George P. Ahern, of Washington, D. C., for many years Chief of the Forest Service in the Philippine Islands, gave a very enlightening talk on "After the Privately Owned Virgin Forests Disappear." Professor Nelson C. Brown, of the New York State College of Forestry, Syracuse, New York, spoke upon the causes of idle land in the Lake States. He estimated that 10,000,000 acres of forest land are idle in the New England States.

Major Evan W. Kelley, of the United States Forest Service, told of the administration of the White Mountain National Forest, and R. S. Kellogg, Chairman of the National Forestry Program Committee, spoke on recent legislation in Congress affecting

forestry. Other addresses were given by Professor James W. Toumey, Director of the Yale Forest; Wakefield Dort, State Secretary of the Izaak Walton League; and John H. Foster, State Forester of New Hampshire.

Map Wilderness by Plane

The first use of an airplane in transporting a United States Geological Survey exploration party into the wilderness of Alaska, has been reported by the Department of the Interior. According to the report, technical men of the party make frequent use of the plane and are thereby enabled to save many days of packing, a matter of great importance in the short Alaskan open season.

New Forest Sport in Michigan

Climbing forest fire observation towers has been added to the list of summer sports in Michigan. A review of the registers maintained at the various towers reveals the fact that large numbers of persons are visiting them. Neither men, women or children are daunted by the tall outside ladders that stretch up to the shelter house on the top of the tower. They climb bravely to the crow's nest for the unrivaled views that may be had from these vantage points. Visitors from Florida in the south to Washington on the Pacific coast, left their names on the record books during the past summer.

Nebraska Plants Trees

Nebraska reports that during April, 1928, the Agricultural Extension Service of the University distributed 682,000 forest tree seedlings to 2,600 farmers, representing every county in the State. In addition, the Bureau of Game and Fish planted 25,000 pine transplants in Cherry County and the United States Forest Service planted 1,000 acres of pine transplants on the Nebraska National Forest. These last plantings bring the total acreage of pine plantings on the Nebraska National Forest to approximately 13,000 acres.

TO AID THOSE WHO HELP THEMSELVES

U. S. GOVERNMENT BULLETINS and publications of associations contain useful information at cost. Also NEW books at 10% off, and commercial booklets free.

Ask for *Society Bulletins* on prize flowers and catalogs, 2c each; *Gladiolus*, *Dahlias*, *Delphiniums*, *Iris*, *Peonies*, and *Sweet Peas*. Commercial booklets *Free* on *Rock Gardens*, *Cacti*, *Rare Wild Flowers*, *Tree Care* and *planting*. Forests and woodlots on the home place; a small greenhouse. Power Lawn Mowers, Spraying, Fertilizers, Pruning trees, shrubs, and vines. "Fur Farming for Profit" (15c postpaid), a Government bulletin on Silver Fox Farming—the most profitable farming enterprise.

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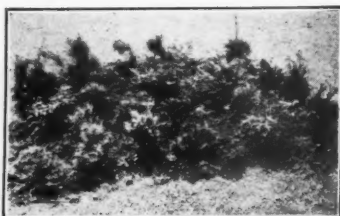
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These trees are all transplanted specimens.

Keller to Direct Roadside Planting

John W. Keller, Chief of the Bureau of Forest Extension, of the Pennsylvania Department of Forests and Waters, has resigned to take charge of roadside planting of the Pennsylvania Highway Department. Mr. Keller graduated from the Pennsylvania State Forest School in 1910, and was appointed to head the Bureau of Forest Extension in 1920. He has been succeeded by Charles R. Meek, who has been Assistant Chief of the Bureau of Forest Protection since 1920.

National Forestry Survey

Franklin W. Reed, industrial forester for the National Lumber Manufacturers' Association, is making a survey of forest resources of the country. He has completed investigations among the mills and timberland owners of Virginia and North Carolina, and is proceeding over an itinerary which includes the forest regions of the Atlantic States, the South, and the Lake States. Already his investigations have brought optimistic reports from Virginia and have led him to the conclusion that forest growing and the manufacture of forest products always will be a most important part of the wealth-producing activities of the North Carolina pine region.

The Empire Forestry Conference

The Empire Forestry Conference which opened early in August in Australia and New Zealand, will continue until early in October, according to an announcement. The conference, the largest of its kind in the world, opened at Perth, Australia. Every section of the British Empire is represented by delegates. E. J. Zavitz, Deputy Minister of Forestry, represented the Province of Ontario at the conference.

Australia's main forestry problem is that of fire prevention, due chiefly to its desert climate. Its most notable timber regions are the western and southern portions, including Tasmania.

National Lumber Office at Pittsburgh

The thirteenth of a series of offices, established in wood-consuming centers of the country, has been established at Pittsburgh, Pennsylvania, by the National Lumber Manufacturers Association. The purpose of the new office, according to A. T. Upson, eastern manager of the Association, is to bring to lumber users in that region the benefits of the Association's technical staff, and its trade promoting campaign.

Phytopathological Society Meeting

Scientists from many parts of the country recently attended the annual field meeting of the American Phytopathological Society, a national organization of experts on plant diseases, at the Bartlett Tree Research Laboratories, at North Stamford, Connecticut.

The scientific group this year made a special study of disease prevention and health maintenance among ornamental trees and plants, and a great deal of interest was displayed in the research work at the Bartlett laboratories, where shade tree experiments are in progress.

Informal discussions of tree problems were conducted by Dr. W. H. Rankin, of Cornell University, chief pathologist at the laboratories, and Dr. Carl Deubar, of Yale University, in charge of the physiological work.

Among those who attended the meeting were M. B. Wait and R. J. Haskell, of the Bureau of Plant Industry; W. H. Martin and L. K. Jones, of the New York Agricultural Experiment Station; D. S. Welch, Cornell University; L. H. Leonian, University of West Virginia; H. W. Anderson, University of Illinois; L. O. Overholts, Pennsylvania State College; E. S. Reynolds, Missouri Botanical Gardens, and W. A. McCubbin, Pennsylvania Department of Agriculture. The foreign visitors were Alberto Graf, Chile; A. W. McCallum, Canada, and Y. Tochinal, Japan.

Canadian Game Shipped to New Zealand

One of the results of the wild life conservation policy carried out in the national parks of Canada, by the Department of the Interior, says *Natural Resources*, is that Canada is now in a position to assist conservationists of other lands. At various times in recent years donations of wild animals have been shipped to points in the United States and other countries.

Recently one pair of beaver and one pair of Rocky Mountain sheep were shipped from Vancouver to the city of Auckland, New Zealand. The beaver were taken in Jasper National Park, while the sheep are from the rapidly increasing wild herd in Rocky Mountains National Park.

Every precaution was taken to see that the animals reached their destination in good condition, and on arrival at Auckland they were placed in the Zoological Gardens of that city.

New Jersey Forests Pay

Revenue derived from the New Jersey State Forests from July, 1927, to July, 1928, shows an increase of eighty-eight per cent over the previous year, according to the New Jersey Department of Conservation and Development. Thus, the State Forests

continue to pay eighteen per cent of their total cost as they did for the fiscal year of 1926-27.

A great portion of the income was received from the sale of white cedar products from improvement thinning operations on the Lebanon State Forest, in Burlington County. The balance was obtained from permanent camp leases and sales of sand, gravel, sphagnum moss, cordwood, charcoal wood and timber stumpage.

State Forest Holdings Increase in Pennsylvania

State Forest land purchases for the current year now exceed 153,000 acres, according to a statement issued by Secretary Charles E. Dorworth, of the Pennsylvania Department of Forests and Waters.

The largest purchase was made in Potter County, amounting to 50,482 acres, comprising ten tracts. Purchases in Clinton County amounted to 32,019 acres, comprising four tracts; Centre County, 13,735 acres; Elk County, 14,307 acres; Somerset County, 5,391 acres; Cameron County, 4,871 acres; Clearfield County, 4,018 acres; Tioga County, 3,595 acres; Jefferson County, 3,294 acres; Perry County, 2,143 acres; Fulton County, 2,352 acres; Bedford County, 2,829 acres; Snyder County, 2,832 acres; Lycoming County, 1,306 acres; Cumberland County, 373 acres; Franklin County, 1,081 acres; Cambria County, 15 acres; Union County, 202 acres.

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Red Pine (Norway) 6 to 12 in. X	7.50	46.00
Douglas Fir, 10 to 12 in. XX	44.00	375.00
Hemlock, American, 4 to 6 in. X	12.00	90.00

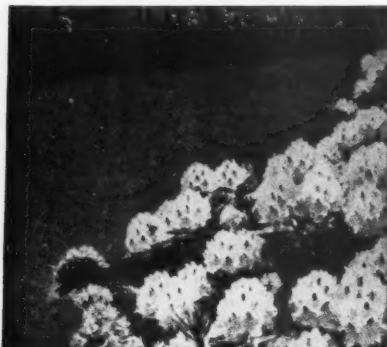
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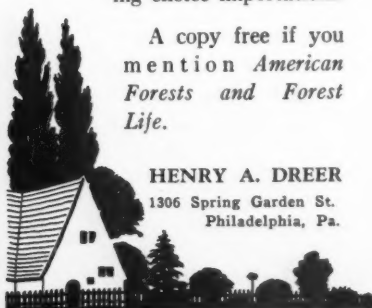
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lists all Bulbs, Plants and Seeds which should be planted in the Fall. It illustrates and describes the beautiful Roses which we have specially prepared for Fall planting and the Spring-flowering Bulbs, including choice importations.

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Philadelphia, Pa.

Virginia Courts Uphold Destruction of Red Cedar

The Supreme Court of the United States in a recent decision sustained the contentions of the State of Virginia in the enforcement of the provisions of the Cedar Rust Act.

Under the provisions of the Virginia statute the State Entomologist ordered several land owners to remove red cedar trees growing on their property. Upon the refusal of the owners to do so the State Entomologist caused the trees to be cut down. The removal of the cedar trees was deemed necessary to prevent the rust with which they were infected from spreading to the apple orchards of the locality. The appeal by the owners was made on the plea that the statute under which the enforced removal was made was unconstitutional.

The Supreme Court in handing down its decision made a comprehensive review of the statute.

The Court said: "It will not do to say that the case is merely one of a conflict of two private interests and that the misfortune of apple growers may not be shifted to cedar owners by ordering the destruction of their property; for it is obvious that there may be, and that here there is, a preponderant public concern in the preservation of the one interest over the other. * * * And where the public interest is involved preferment of that interest over the property interest of the individual to the extent even of its destruction, is one of the distinguishing characteristics of every exercise of the police power which affects property."

The Court recognized the fact that the only practicable method of controlling the disease and protecting apple trees from its ravages was by the destruction of all red cedar trees, subject to the infection, located within two miles of apple orchards. It was further stated by the Court, "The red cedar, aside from its ornamental use, has occasional use and value as lumber. It is indigenous to Virginia, is not cultivated, or dealt in commercially on any substantial scale, and its value throughout the State is shown to be small as compared with that of the apple orchards of the State. Apple growing is one of the principal agricultural pursuits in Virginia. The apple is used there and exported in large quantities. Many millions of dollars are invested in the orchards, which furnish employment for a large portion of the population and have induced the development of attendant railroad and cold storage facilities."

West Coast Fire Prevention Propaganda

The Pacific Coast Cone Company has notified the United States Forest Service that it will use forestry slogans on 2,000,000 pieces of printed matter this year, and annually hereafter. The Portland Box and Label Company has issued labels bearing twelve different forest protection slogans.

Development of Forest Machinery and Methods in Germany

The machinery committee of the German Forestry Society has reported the development of a tractor engine sufficiently mobile to be used for cultivation work in forests. This engine, of twenty horsepower, has also been used to transport wood.

As a means of ground cultivation in the forests of Germany, the Society reports that implements resembling plows have hitherto been used, but found unsatisfactory because of obstacles met with in the forest floor. There has now been developed a ground cutter having quills which revolve rapidly around an axis. Such a machine may be used with either a small motor of five horsepower or the twenty horsepower tractor.

The Germans have found a way, the Society reports, to give preservative treatment to telephone poles or railway ties already in use. By means of a small stabbing apparatus a decay-preventive paste is injected into the wood, especially in parts near surfaces that are in contact with the ground. When moisture is absorbed by the wood the paste is distributed evenly through these parts.

Forest Ranger Examinations

The United States Civil Service Commission has announced an open competitive examination to fill positions as forest ranger in the United States Forest Service. Applications must be on file with the Civil Service Commission at Washington, D. C., not later than October 15, it was announced.

The examination will be held only in certain places in Arizona, Arkansas, California, Florida, Idaho, Montana, Nevada, New Mexico and Utah, which are specified in the announcement distributed upon request by the Commission. The law requires that forest rangers shall be selected, when practicable, from among qualified citizens of a State in which the forest, where the vacancy occurs, is situated. The entrance salary is between \$1,620 and \$2,000 a year.

The primary duty of forest rangers is to protect their district against fire. They must also carry out plans for the development of the physical resources of their districts and for the growing of timber. They must handle the field work in connection with the sale of timber, the grazing of livestock, and other activities in their districts, and also perform such work as building and maintaining telephone lines, trails, cabins and fences.

The Civil Service Commission also announces an open competitive examination to fill vacancies as United States game protectors, in the Bureau of Biological Survey. The duties consist of actual field work in assisting in the detection and prosecution of violations of the Migratory Bird Treaty Act and investigating alleged illegal shipments of game. The entrance salary is from \$2,300 to \$2,800 a year.



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New Jersey Plants Over a Million Trees

New Jersey land owners ordered 1,150,950 forest tree seedlings for planting last spring, according to the State Department of Conservation and Development. This is 74,350 more than were ordered in the State in the spring of 1927. The seedlings were planted on municipal watersheds, private forest holdings, idle farm lands and land not suitable for agricultural use.

Morris led all other counties with orders totaling approximately 200,000 seedlings. The largest single order was placed by the East Orange Water Department for 50,000 red pine and 50,000 Norway spruce.

South Must Produce Half of Nation's Timber, Says Expert

In *The Southern Lumber Journal*, Howard R. Krinbill has digested a volume of forest statistics, with particular focus upon the forests of the South. His conclusion is that the South holds the key to the future of American timber resources.

The question is pertinent as to whether in 1954 this nation will rank first in world timber production, and whether our annual per capita consumption of wood will remain at 228 cubic feet. If we are to hold a comparable position, the forests of the South must provide 50 per cent of our annual timber needs.

To accomplish this, Mr. Krinbill declares that forest fire protection must be increased 800 per cent; activity by Federal and State governments in acquisition of mountain lands for water-sheds and non-restocking waste lands throughout the South must be increased 1400 per cent; activity by private owners in

managing forest lands conservatively must be increased 2500 per cent; and an increase of 44,000 per cent in reforestation by hand planting is necessary.

Workable forest land taxation, better utilization, higher stumpage prices, and limited production are necessary, he maintains, concluding that if the South fails in this task, the next generation of Americans may be hungry for wood.

State Nursery For West Virginia

State-grown forest seedlings for distribution among West Virginia land owners will be available within the next two or three years as a result of a State nursery started recently under the direction of P. M. Browning, chief forest fire warden of the Game and Fish Commission.

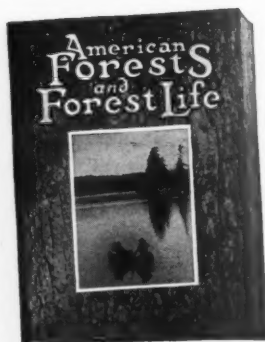
This nursery has been made possible through an agreement made by the State Game and Fish Commission with the United States Forest Service. The agreement was made under Section 4 of the Clarke-McNary Act, which provides for Federal and State cooperation in the expenditure of equal sums of money for the distribution of forest tree planting stock to land owners.

Berlin Plans Green Week

Berlin is planning its fourth *Grüne Woche Berlin*, which is literally "Berlin Green Week" for January 26 to February 3, 1929. This is Germany's great agricultural week. Included among the subjects to be featured are various phases of agriculture and forestry. Exhibitions are planned in the Radio Hall. With forestry will be included many things of interest to hunters and sportsmen.

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October, 1928

North Carolina Chamber Provides Funds for Forest Fire Protection

Establishing what is said to be a precedent for the State in being the first commercial organization to undertake an official program of forest fire control, the Stokes County Chamber of Commerce, in North Carolina, has appropriated \$750 for cooperation with the State Forest Service and has entered into a contract for the organization of a fire warden service.

This is said to be the first case of an organization of citizens in any county entering directly into a contract with the State for fire protection for the forests, although on a number of occasions others have given active support and urged the adoption of a program by the county commission.

Towers to Guard 200,000 Acres of Georgia Timber

Plans are now under way for the protection of growing timber on 200,000 acres of four Georgia counties by a system of lookout towers. The four counties included in the plan are Ware, Clinch, Atkinson and Lanier. The system of towers will be financed by the cooperation of five timber protective associations. The plan will provide for seven towers and seven patrolmen, and it is estimated that the cost for six months' maintenance will not exceed four cents an acre.

Nature's Steam Heating Plants

While the steam-heating plants in use in the habitations of man are a comparatively modern invention, the Department of the Interior points out that nature has a steam-heating system of her own that has been in operation for many centuries and which has recently been put into practical use in some of the National Parks.

In the Yellowstone, several man-made structures are now being kept warm through the use of natural hot water heat. In the general store at the Upper Geyser Basin the living rooms are heated by hot water piped in from one of the hot springs, and the hot house maintained in connection with the store is heated from the same source. The hot water used in the bath house in this locality also comes from natural sources.

In the Hawaii National Park, in the Hawaiian Islands, the administration building of the National Park Service is heated by live steam piped from one of the hot vents of the Kilauea Volcano.

Another area where natural heat may be used for heating and even cooking purposes is the Valley of Ten Thousand Smokes, in the Katmai National Monument, Alaska. This area is inaccessible to the public generally, but exploring parties have reported that during cold weather their tents could be so placed that they were heated by steam from one of the "ten thousand smokes" that rise all over the valley, and that in some of the vents food could be cooked.

New Hampshire Improves White Pine Stands

New Hampshire foresters recommend that gray birch be cut out of well-stocked stands of white pine as soon as the pine appears to be severely shaded or rubbed by the overtopping birch. The first release cutting is usually done when the pines are about ten feet high—a second releasing may be necessary a few years later.

With labor at 50 cents per hour and the resulting gray birch wood of little or no value, it cost \$3 to \$6 per acre to free the white pine. Two such weedings will cost approximately \$10 an acre. On well-stocked stands of young white pine this cost is reasonable and compares favorably with planting costs of about \$15 per acre.

The comparison is made more favorable because in releasing pine the investment is made ten or twelve years nearer harvest time than is any similar investment in planting. Furthermore, carrying costs may often be somewhat relieved by the marketable value of the gray birch removed.

On an average site in New Hampshire it is possible to grow eighteen cords of gray birch in twenty years. On a similar site it is possible in fifty years to secure 30,000 board feet or more of white pine. Unless the pine is released the land will be taken over by the birch.

In order to get a large number of New Hampshire woodland owners to handle their white pine lands in this way, Extension Forester K. E. Barraclough is carrying on demonstration meetings in various parts of the State.

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Book News and Reviews

HARDY EVERGREENS. By Frank A. Schrepfer. Orange Judd. Price \$1.25.

A popular presentation of the selection, arrangement and care of some of the hardy cone-bearing evergreens. The book is developed around the author's four rules for success with evergreens:

1. Buy or secure good stock.
2. Plant carefully.
3. Give the plants reasonable care after planting.
4. Choose the right kind of plant for the purpose and situation you have in mind.

These rules are amplified and discussed with text and illustrations. A key and check list of the hardy evergreens completes the book.—G. H. C.

BAIT-CASTING. William C. Vogt. Longmans, Green & Co. \$2.50.

The experiences of a widely known expert with the rod make this brief volume delightful reading to all fishermen and out-of-doors people. It is an excellent combination of practical discussion and entertaining narrative, and has a wealth of information on rods and reels, artificial baits, the intricate phases of striking and playing fish, the problem of finding different species of fish, and the care of the booty.

Mr. Vogt is at all times direct and specific in his advice. There is nothing omitted to leave a question in the reader's mind, nor does he include superfluous material. The book is enlivened by a thousand anecdotes, some of them told in racy fishermen's slang that gives a pleasing tang of reality. The illustrations include several motion picture photographs of the author using the correct method of bait-casting.—B. F. G.

MAINE OF THE SEA AND PINES. By Nathan Haskell Dole and Irwin Leslie Gordon. Published by L. C. Page & Company of Boston.

That the boundaries of a single state can contain the wealth of material that goes to make up this instructive and colorful book is difficult to believe until one has read the volume. In it almost every class of readers may find something of appeal. There is history in abundance, detailed description of picturesque mountains, lakes and wood-

lands, enticing accounts of the "sportsman's paradise," a study of the educational system in the state, a survey of its commercial resources and industries; and throughout all there is interspersed at every possible place the haunting beauty of old Indian legends and poems.

The volume is one of the "See America First Series," and is attractively bound and excellently illustrated.—B. F. G.

"Growing Pine Pulpwood as a Farm Crop," by W. K. Williams, has been published by the Extension Service of the College of Agriculture, Arkansas. Over one-third of Arkansas has a stand of pine, much of which is suitable for making kraft paper and fibre board. Twenty years are sufficient to produce trees of pulpwood size, which in some cases will yield twenty to thirty cords to the acre. Rather than sell the timber on the stump, the farmers are urged to cut and market it themselves. By so doing, the owner nets a fair stumpage and gets wages for himself and team for harvesting his own crop. Most of the figures and tables are for loblolly pine and shortleaf pine. It includes volume tables in terms of cords, and cost figures of cutting, handling and loading.

PRACTICAL CONSERVATION. By George Otis Smith, Director of the United States Geological Survey, before the Mineral Law Section of the American Bar Association.

Mining is a process of continuous depletion, whereas agriculture harvests annual crops, and even forestry harvests periodic crops. A Harvard economist has stated the contrast, "Mining typically lives upon its capital; agriculture upon its income."

American industry has all the energy of youth, yet with a background of three centuries of colonial and national life we Americans are now mature enough to begin to think in terms of time as well as of space. *A nation's greatness can be gauged by duration as well as by area, and a nation's wealth can be measured by its power to last. Prosperity to continue through the centuries is what we must plan for.*

The Old World idea of an entailed estate might well be brought over into our way of thinking of the public interest in natural resources, for the vital question for America today is not how many acres of oil

fields or square miles of coal beds or million tons of copper ore are there for us to exploit, but rather how long can the present order of things be continued so as to benefit other generations of Americans. Prosperity should fail to satisfy the patriotic citizen unless it is backed up with some guaranty of permanence. To regard ourselves as trustees, possessing the uncounted wealth of America only to be passed on to our successors in interest without unnecessary depletion, is adopting the Golden Rule in perpetuity. Stewardship of that type means the greatest good to the greatest number for the longest time, and that is practical conservation.

"Park Recreation Areas in the United States," is bulletin No. 462 of the U. S. Department of Labor. The title may prove a little misleading to readers of this magazine for the subject matter deals primarily with the development of city parks and recreational areas. As a general rule, the larger the city the larger is the area devoted to parks and in the same way larger salaries are reported for park superintendents for the large cities than in the small ones. This bulletin contains a statement of the need for parks in industrial communities and reflects very largely the activities of the Playground and Recreational Association of America.

COMMON WILD FLOWERS OF PENNSYLVANIA. By Dr. Ernest M. Gress, State Botanist of Pennsylvania. The Times Tribune Company, Altoona, Pennsylvania. Price .75 cents—two copies \$1.25.

Written by an outstanding authority, "Common Wild Flowers of Pennsylvania" is a practical hand book of 120 pages. It is so simple and interesting in style that it should appeal to everybody. Illustrated with well selected photographs and printed on good paper, this little book should be a great help to Pennsylvania teachers, scout leaders and nature study educators. It will undoubtedly be helpful in promoting a comprehensive and far-reaching wild life conservation program in Pennsylvania.—L. M. C.

There are increasingly numerous evidences that forestry in America is getting out of the stage of theory into the realm of achievement. State and federal bulletin files are cluttered with glowing statements of what might be done if forestry were practiced. Within the past few years, several institutions have brought out publications describing forestry achievements. The Harvard Forest School was among the leaders in this line with its "Ten Years of Forest Practice on the Harvard Forest." Yale has described the management of the Maltby tract of the New Haven Water Company, and Cornell has published a description of the management of its scattered college woodlands for ten years. More recently they brought up to date the early ex-

tension work of the Forest Service in a bulletin describing the results of twenty years of forest care in Dutchess County, New York. And now the Forest Service has come out with a compendium of forest accomplishments by a group of men who helped in the work.

"Growing Pine Timber for Profit in the South" is a pamphlet which falls in the same class with a demonstration. It is a compilation of the forest achievements of several business firms and individuals. Like a demonstration, it is convincing because it tells of things done. It proves by example. It is easy to read, and will undoubtedly exert a real influence on southern forest practice. Known as Miscellaneous Publication No. 24 of the Department of Agriculture, it is available at 5 cents a copy from the Superintendent of Documents, U. S. Government Printing Office, Washington, D. C.

SPRING FLOWERING BULBS. By Clark L. Thayer. Orange Judd, Inc. Price \$1.25.

Amateur gardeners will welcome this popular treatment of some of the more easily available spring flowering bulbs. It is built around the tulip, the narcissus and the hyacinth, with their several varieties, but brief space is given to a number of other bulbs. Cultural methods are discussed, and a chapter on the control of the more common insect pests and diseases is included.—G. H. C.

Game Preserve FOR SALE in Dixie

A plantation estate comprising 6,281 acres located on a tidewater river in southeastern Georgia. A most attractive hunting and fishing preserve in a region abounding with game.

One-half the area is timbered with second-growth southern pine which will, if properly managed, provide a satisfactory revenue.

This property adjoins other sportsmen's estates. Deer, turkey, quail and ducks are plentiful. Fencing is the only requisite to insure the game supply.

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We recommend this property highly. Write us, without obligation, for further information.

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Fire Signs That Move and Attract

"One picture is worth a thousand words" and a picture in COLOR and ACTION is worth a thousand of the ordinary kind.

Here we have a night scene depicting a raging forest fire. The flickering of the flames in the Scene-in-Action picture flare and sink as though actually fanned by the breeze, lighting up the surrounding scene with vivid, colorful flashes. The smoke rolls upward exactly as it would do in nature, now whirling in mad spirals, now floating serenely.

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Each Month Forestry Questions Submitted to the Association Will Be Answered in This Column. If an Immediate Reply is Desired a Self-Addressed, Stamped Envelope Must Accompany Letter.



QUESTION: Will a willow tree grow from a switch?—J. D., Maryland.

ANSWER: Willow sprouts readily. One need only cut a sturdy twig or branch one or two feet long and stick it into the moist ground. A rather long cut is better and it should be planted deep so that only four inches of the upper end are above the ground.

QUESTION: Is it practical to transplant small woods-grown pine trees during the late summer or fall?—J. N. F., Wisconsin.

ANSWER: Small pines can be safely transplanted in northern Wisconsin during the latter part of August and all of September. In handling pine seedlings and transplants always use care to keep the roots moist and shaded from the direct sunlight. If only a few trees are planted, keep them watered during dry spells until late fall. This is impractical in the case of large plantations.

QUESTION: I am a Girl Scout and expect to go to college this fall. Could you suggest some line of forestry work in which I could be useful?—L. G. I., New York.

ANSWER: Some special scientific branches of forestry as well as public relations work offer attractive opportunities for women. Several State Foresters and the United States Forest Service employ women to take charge of educational activities with schools, women's clubs and outdoor groups. Not the least of the opportunities for a forestry trained woman is in the Girl Scout movement. The several phases of biology, botany, economics, conservation, and the psychology of teaching are all essential.

QUESTION: What has become of the Douglas squirrels in Sequoia National Park?—E. G. H., California.

ANSWER: According to Dr. W. B. Bell, of the United States Biological Survey, the squirrels in the Sequoia National Park are not the true Douglas squirrels but a paler subspecies, *Sciurus douglasii albolimbatus*.

These squirrels depend for food upon the seeds of cones in various spruces, pines, and Sequoias, and when the food supply is scarce they migrate to other sections. Another possible explanation is lack of water; they are very thirsty animals and require water every day.

QUESTION: What are the two largest fresh water lakes wholly within the United States?—A. M. J., Minnesota.

ANSWER: According to the United States Geological Survey, the largest fresh water lake wholly in the United States is Lake Michigan, area 22,400 square miles. Lake Okechobee, Florida, is next in size, 730 square miles in area.

QUESTION: What is the situation in respect to the Superior National Forest in Minnesota, which, I am told, is threatened by lumbering interests who desire to flood a major part of it?—C. P., Massachusetts.

ANSWER: In the neighborhood of International Falls, Minnesota, the E. W. Backus power interests, of Minneapolis have applied for a permit to erect or develop dams which, it is charged, would raise the water levels of a number of lakes on either side of the Canadian border as much as thirty feet, inundating large areas of timber and materially changing existing shore lines. About sixty per cent of the area probably influenced by such a water power development is in Canada, and the remaining forty per cent is in Minnesota. Two bills presented in the last Congress—one by Senator Shipstead and the other by Representative Newton propose the creation of the "Superior-Quetico National Park and Forest," and provide for the protection and development of the Superior National Forest as a recreation area, to the end that with Canada's Quetico National Park, an international forest and park system would be created.

The only action of Congress was to appoint a Senate Committee of five to investigate, and determine the advisability of the principles set forth in these bills, and report to the Senate at the next session of Congress.

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BEFORE



AFTER

Pennsylvania's New Sale Plan of Forest Trees

The plan of the Pennsylvania Department of Forest and Waters for the sale of forest tree seedlings for the fall planting season of 1928 and the spring planting season of 1929 has been changed so that the minimum shipment from the State Forest tree nurseries will consist of 1,000 trees, and the minimum of one species placed at 500. This will enable forest tree planters to set out as small a tract as three-fifths of an acre by planting two kinds of trees, by spacing them five feet apart, and practically an acre by spacing them six feet apart. The planting of trees on smaller sized tracts cannot be considered a reforestation project under the 1927 Tree Sales Act.

Naval Stores Statistics for 1927

The naval stores industry and trade during the past season ending March 31, 1928, witnessed continued great activity in practically all lines of the business. The term "naval stores" is used to describe those products of a chemical nature obtained from the pine tree, chiefly from the long leaf yellow pine of the Southern States. Turpentine and rosin are the two most important commodities coming under the term "naval stores."

Trade estimates published some time ago indicate that there was a considerable increase in the production of turpentine and rosin during the last season which closed March 31, 1928. At the same time, according to the figures compiled by the Bureau of Chemistry and Soils, United States Department of Agriculture, the principal manufacturing industries using turpentine and rosin in their products or processes consumed, during the calendar year 1927, a total of 5,838,298 gallons of turpentine and 906,951 barrels of rosin, together with 59,168,760 gallons of mineral oil thinners. This was an increase over the consumption in 1926 of approximately 221,000 gallons of turpentine, most of which went into paint and varnish. On the other hand a falling off is shown in the consumption of rosin from 984,085 barrels in 1926 to 906,951 in 1927. These consumption data do not include turpentine used for household purposes or for thinning paint prior to application, nor rosin used in small quantities for various purposes.

Data obtained from the Department of Commerce show an increase also in the exports of turpentine and rosin during the past naval stores season. These exports amounted to 16,494,551 gallons of turpentine and 1,373,411 barrels of rosin, the greatest exportation of these products from the United States since the season of 1913-14.

Royal Arboricultural Society Adopts Decentralization Scheme

A decentralization scheme for decentralizing the work of the Royal English Arboricultural Society, by the grouping of counties into divisions under the supervision of a divisional chairman and secretary was adopted at the summer meeting of the Society, at Inverness, Scotland, August 23 to 31. The object, it was stated, is to strengthen local organization by the linking up of districts where the membership is low with stronger areas.

Forestry Cooperation Established for Pan America

A division of agricultural cooperation has been established in the Pan American Union. The division will work to advance cooperation and research in agriculture, forestry, and animal husbandry in the member countries of the Union. It will facilitate the exchange of seeds and plants among these countries, and will study the needs of the different nations for introduction and propagation of new varieties of seeds and plants and for the development of new agricultural industries.

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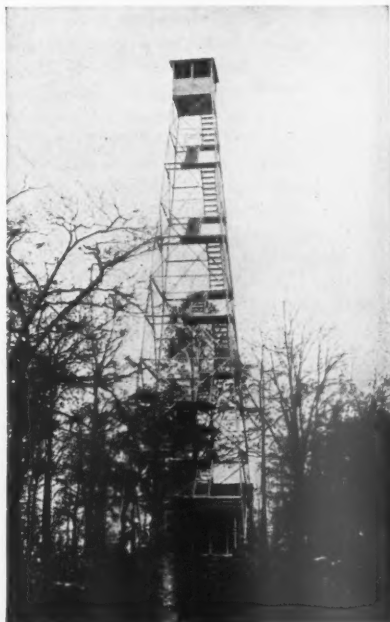
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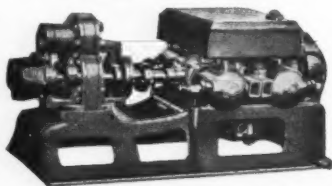
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Write for further information

SAMUEL T. DANA, Dean

ANN ARBOR

MICHIGAN

Celebrates Centenary of Forestry Education in Sweden

In October, Sweden will celebrate the one hundredth anniversary of technical forestry education. Exercises will be held at the Royal Forest School near Stockholm, to which representatives of forestry in other lands have been invited. To commemorate the occasion a special number of the Journal of the Swedish Forestry Society will be issued, which will contain a résumé in English, French and German.

Forestry Reunion at Ann Arbor

Graduates of the University of Michigan Forest School, at Ann Arbor, Michigan, will hold a reunion at the University, October 26 and 27, the first since the school was established in 1903. The reunion will be held partly in celebration of the establishment of the present School of Forestry and Conservation and partly in tribute to Filibert Roth, who founded the original school. The school forests will be visited and conferences held with the faculty. The last event of the official program will be the Michigan-Wisconsin football game.

Record Lumber Shipment

That which is reported to be the largest rail shipment of lumber from one sales organization recently left Spokane, Washington, for North Dakota. It consisted of fifty-eight box cars loaded with 1,566,000 board feet of the new Weyerhaeuser 4-Square wasteless lumber. In 1924 there was distributed in North Dakota 118,926,000 board feet of soft wood lumber. Most of this was from Washington and Idaho, with lesser amounts shipped from Alabama, Minnesota, Montana, Oregon, and Wisconsin. This single shipment from mills in Washington and Idaho is practically one-seventh of that year's consumption.

Alabama Measures Results from Education

The Fourth Annual Report of the Commission of Forestry in the State of Alabama published for the year 1927 tells how the field service has been developed into a state-wide organization. At the close of 1927, there were thirty-nine forestry districts in the State, covering eighty-two per cent of all Alabama's forest land. The local agents in charge of these districts have their forest responsibilities clearly outlined. In addition to actual fire fighting, which comprises a comparatively small portion of their work, they carry on education to prevent fires and to secure the cooperation of local people in extinguishing them.

Although 1927 presented an unusually high hazard, the organization held the acreage burned down to a little more than that burned in 1926, altogether 1,448,052 acres. This is large but compares favorably with 1923 and 1924 when more than 7,000,000 acres were burned each year.

In 1927 two hundred and thirty-seven land owners secured trees from the State Forest Nursery for planting. Most popular species were catalpa, black walnut and black locust.

Redwood Lumber From Bogalusa

The big sawmill at Bogalusa, Louisiana, will soon be producing redwood lumber. This is the result of a new company recently organized by the Great Southern Lumber Company and the Finkbine-Guild Lumber Company of Jackson, Mississippi. The Southern Redwood Company will take over all the properties of the Finkbine-Guild Lumber Company, including their redwood operations at Rockport, California. After necessary alterations are made to the sawmill at Bogalusa, Louisiana, it will begin cutting redwood lumber. The redwood cants cut in California will be loaded on vessels and transported to New Orleans, and thence to Bogalusa by rail. The present redwood operation at Rockport, California, is about 40,000,000 feet a year. Under the new plan this will be materially increased.

Forestry for Alaska Schools

A series of "forest lessons" for the children of the interior of Alaska have been prepared by M. L. Merritt, of the United States Forest Service, at the request of Governor Parks. The lessons not only emphasize the importance of forest conservation but are designed to stimulate appreciation of the woods through training in woodcraft and knowledge of forest lore. One hundred and twenty-one sets of the lessons have been distributed to the territorial schools, 168 to Government schools, and twenty-one to the mission schools.

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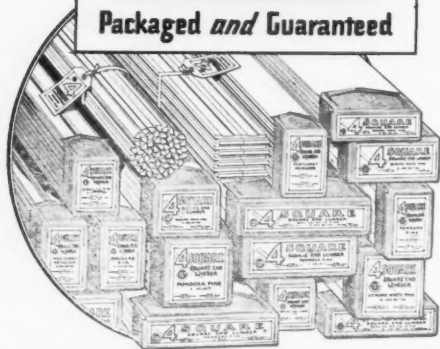
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